# MODERN PACKAGING

PHOTOGRAPHED FOR MODERN PACKAGING BY RUDY MULLER

**SUCCESS STORY:** *Qwip whipped cream—starting a series, p. 90*

*Review and forecast: 'The Shape of 1961,' p. 73* / *Background, p. 39*

**JANUARY 1961**

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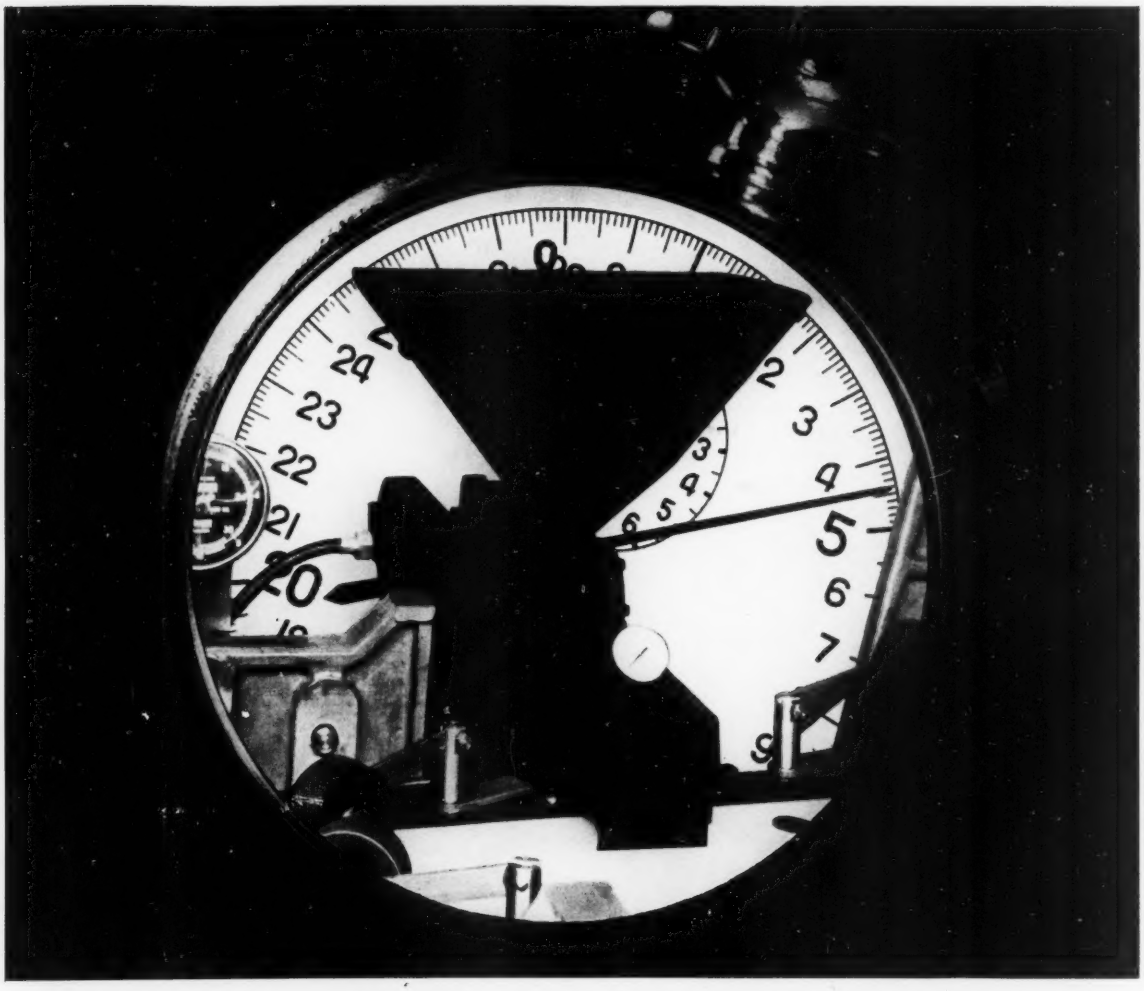
# INSTANT-LOK

**GRANULAR HOT MELT SYSTEM**



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The INSTANT-LOK SYSTEM consists of granular, 100% solids resin adhesive melted and extruded through the applicator pictured above. A thin, instant bonding glue line results. Instant-Lok applicators are available exclusively through National.

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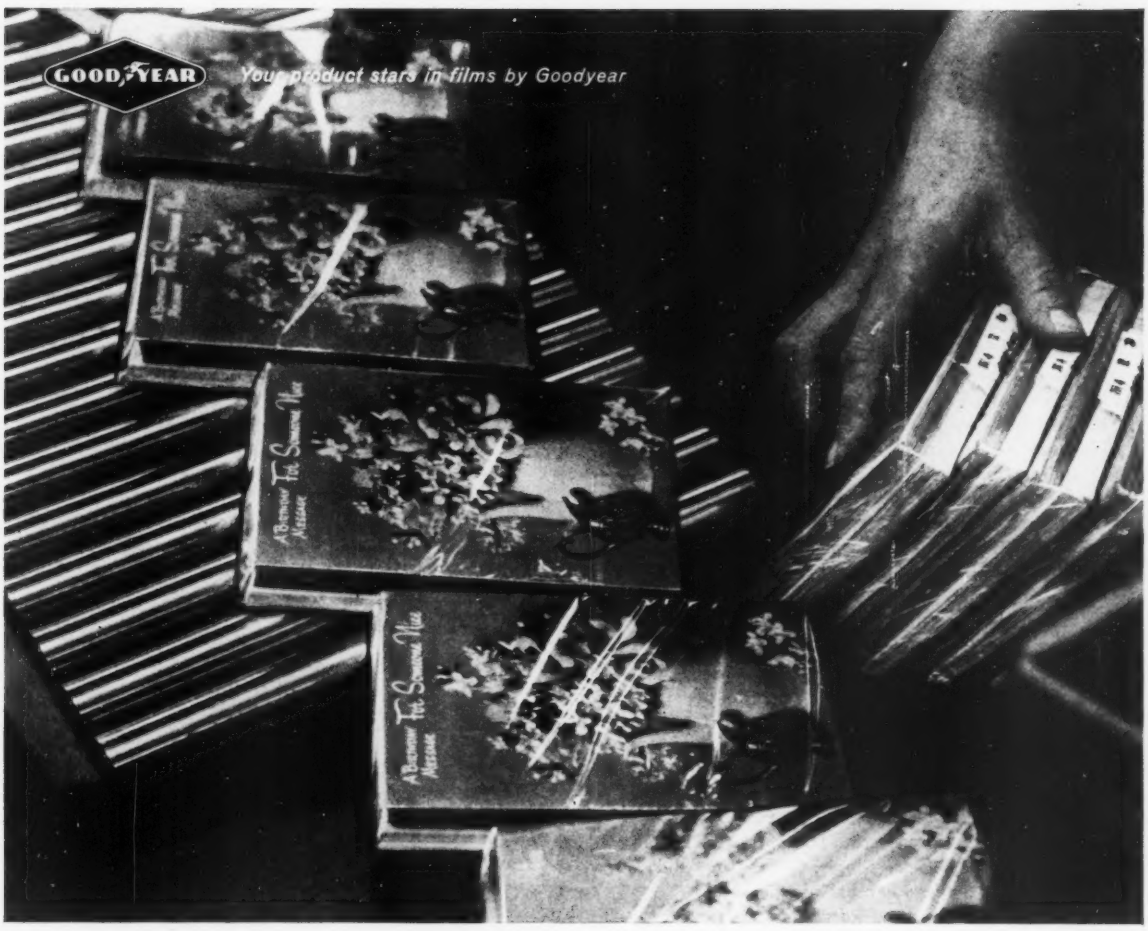


# Shelf life insurance that isn't premium priced

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***Problem***

**Breakage and rewraps were an expensive problem** to a large card manufacturer. The film that was supposed to protect the package didn't.

***Solution***

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GOODYEAR

Vitafilm, a Polyvinyl chloride—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

# IN THIS ISSUE OF MODERN

JANUARY 1961 / VOLUME 34 / NO.5

73 **The shape of 1961**
This will be a year of great challenge to packaging. Pressured by a critical cost-price squeeze on profits, manufacturers are keeping sharp watch for materials and methods that promise new packaging economies. Continuing trends toward market-sweeping developments and lowering costs in the field of plastics are impelling great technological changes among older packaging materials and the machinery for running them. Already they have intensified a general drive for lighter weight and improved efficiency in metal, glass and paper packaging. This look-ahead article can help you spot the areas in which packagers this year either can fall behind or fulfill potentials for lower costs, improved efficiency and broader markets.
General interest.

82 **Packaging tops $20 billion**
An indication of the tremendous expansion of the packaging business is the fact that current expenditures are running in excess of $20 billion a year—an increase of about one-third since MODERN PACKAGING's last over-all estimate three years ago. Surprisingly, foods, drugs and cosmetics take less than half the packaging dollar, while almost 30% is distributed among numerous other non-durables. Included in this study are charts that plot the distribution of the more important packaging materials among the largest packaging-consuming industries.
General interest.

## FRONT FEATURES

39 **Background for Packaging**
Capsule comments and notes on significant news.

44 **Equipment & Materials**
Important new products from suppliers.

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We ask the readers: How do you safeguard new-product secrets with your packaging suppliers?

61 **World Report**
What's news in foreign packaging magazines.

71 **Editorial Memo**
"A new cover series."

84 **Triumph in embossing**

Significant on two counts is the golden ear of corn embossed on Mazola's new foil-laminated carton for margarine. For one thing, it heralds a breakthrough of registered aluminum-foil embossing to cartons for low-priced foods. And it visualizes a major selling point, of great interest to consumers, that cannot simply be spelled out in words. Here is a striking example of the way in which pictorial package design can communicate a vital merchandising message.
General interest.

90 **Qwip whipped cream**
A *Success Story*. MODERN PACKAGING presents the first article in a new cover series. Told from the experience of one company, each of these articles will show how application of a new packaging concept has resulted in outstanding sales success. These case histories may suggest ideas which can help *you* improve your profit picture—just as a unique and exacting packaging system has propelled Avoset's Qwip from the status of an also-ran to third place among aerosol whipped toppings. Its prize-winning lithographed metal can is helping to assure Qwip's place in millions of refrigerators.
General interest.

93 **Special appeals**

Barton's, long famed for its line of Jewish confections, demonstrates by example that modern design can be valid even in appealing to the most conservative of markets. In a thorough and cautious three-stage redesign program, the company has evolved a new packaging look that gives a contemporary interpretation to traditional ritualistic symbols. Proof of the success of this design shift: a steady sales increase.
Special interest: designers, sales, advertising.

98 **Bottling whiskey 50% faster**
Advanced features that should interest every bottler are incorporated in Seagram's new

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synchronous line, now turning out Seven Crown fifths at 180 bottles per minute. Rated at 200 per minute, it boosts production 20% per manhour. All nine mechanical elements on the line are either brand new or have been modified to achieve accelerated speed. The line—which boasts beefed-up rotary, continuous-motion machinery wherever possible—operates from two main drives, thereby centralizing packaging control and synchronizing machinery operation and movement of the glass bottles.

A production-methods article.

96 **Bleaches move to plastics**

Following an impressive sweep of the liquid-detergent field, high-density polyethylene bottles are now making their long-predicted move, expanding into the big liquid-bleach market. At least three companies have introduced blown plastic bottles in one or more test markets, for sizes ranging from quarts to gallons. In addition to the inherent advantages of light weight and durability, the plastic containers offer design freedom and the opportunity of providing such consumer conveniences as easy-to-grip pouring handles and space-saving square shape.
All of these bottles employ colorfully printed paper labels, for easy brand identification.

Special interest: chemicals, toiletries, soap, all liquid packagers.

104 **Flip-lid with header**

Are you looking for an economical package that holds multiple items and can be hung up for pegboard display? Then you may be interested in an ingenious one-piece carton blank, developed for Agrico plant foods, that offers the advantage of a convenient hinge-lid box with the added merchandising feature of an integral punched header. After set-up, the foil-laminated paperboard container holds four individual packets of plant fertilizer. A tamperproof closure is provided by nicks that must be broken to raise the flip lid. The container can be hung up for home storage.

Special interest: hardware, candy, notions.

## TECHNICAL & ENGINEERING

107 **Standards for extrusion coatings**
Polyethylene extrusion coatings, growing in importance to packaging, may double in volume by 1965. Even so, industry-wide quality-control standards have not yet been developed, nor can testing instruments and techniques be borrowed from other industries. However, present methods for checking and controlling such factors as bond strength, heat-seal strength, gauge and basis weight may help solve the problem.
It is important that extrusion-coated films be produced on a high and uniform quality level.
*By Benjamin Lechner and William S. Bunte.*

112 **High-density PE coatings**
Part II. This article began last month with a discussion of the selection of high-density resin, presenting also design criteria for blown bottles. It concludes here with a comprehensive analysis of the factors involved in package evaluation, including permeability, leakage, side-wall distortion, impact, stiffness and machine handling. Test methods are described. *By Brooks B. Heise, J. H. Parliman and Jules Pinsky.*

120 **Questions & Answers**
Solutions to readers' technical problems.

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The why and how of outstanding packages.

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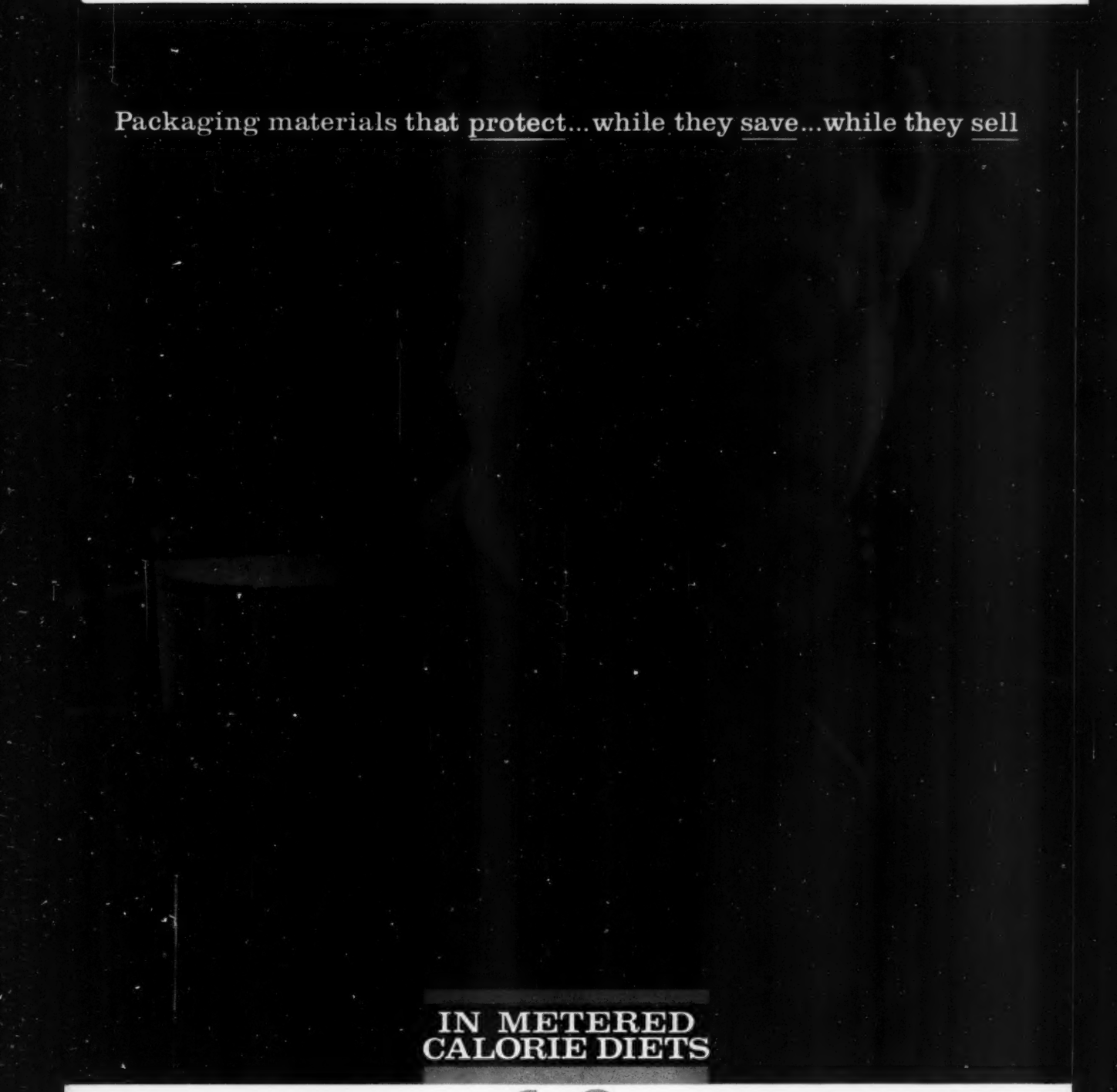

IN METERED CALORIE DIETS

**Ten leading manufacturers of metered-calorie food concentrates for weight control use Riegel materials in convenient pre-measured pouch packages. They buy Riegel because their personal experience has given them faith in Riegel's technical leadership and Riegel's ability to *tailor-make* the right material for the product. This confidence, demonstrated by sales leaders in many fields, is an important reason why you too should talk to Riegel.**

# 10

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**Riegel offers you more than 600 different packaging materials . . . standard or tailor-made . . . to assure just the right combination of product protection, machine efficiency and low cost. Pouch papers, paperboards, glassines, foils, films, laminated in various combinations . . . plastic-coated or waxed . . . printed or plain.**

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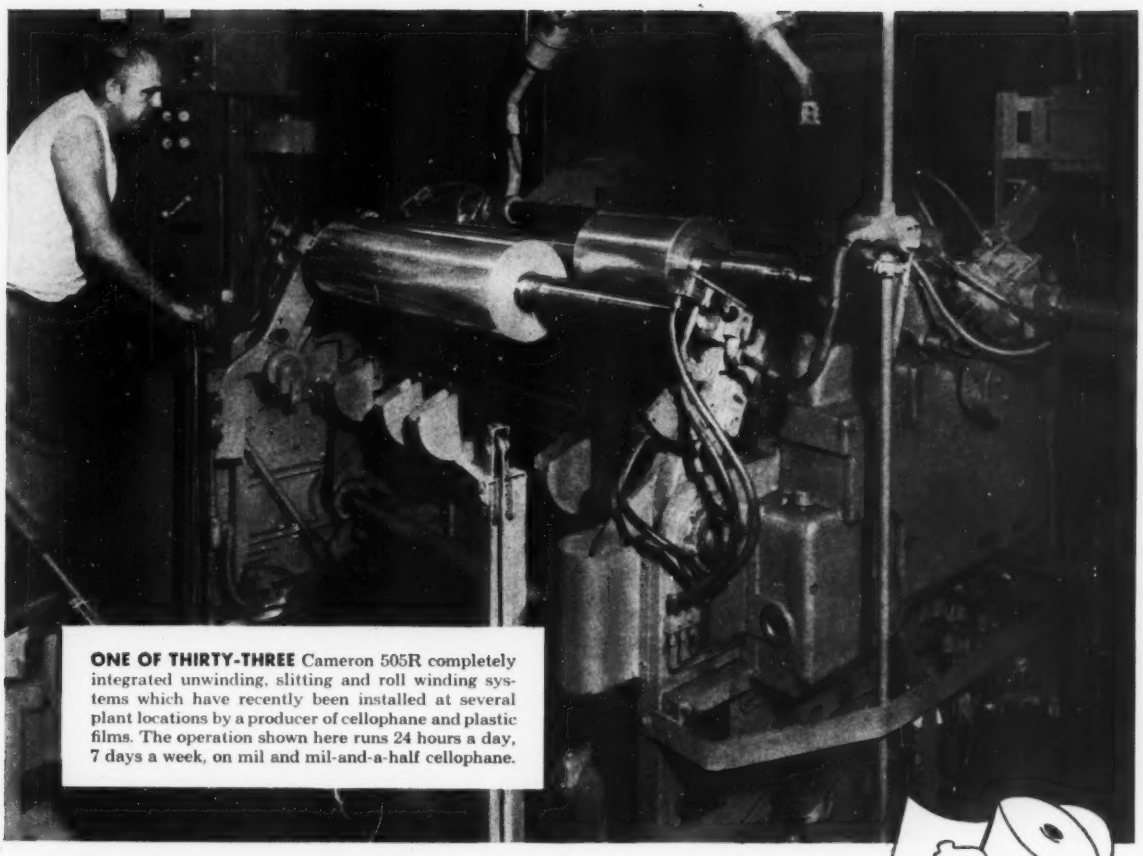

**ONE OF THIRTY-THREE** Cameron 505R completely integrated unwinding, slitting and roll winding systems which have recently been installed at several plant locations by a producer of cellophane and plastic films. The operation shown here runs 24 hours a day, 7 days a week, on mil and mil-and-a-half cellophane.

# *What makes* **The New Roll** *run so fast?*

**Printers and converters** who have used *The New Roll* in papers, films, foils and laminates ask: How can it run so fast without web breaks? Why does it feed out so smoothly right down to the core? How does it keep the web so "live" for better end results, rather than stretched out "dead" in the roll?

The answer is in the way *The New Roll* is made. We call it *The New Roll* because it is fundamentally different—the product of *truly integrated roll control.*

For example, in the patented Cameron 505R unwinding, slitting and roll winding system (shown above) integrated roll control starts with the Cameron Model LHDSM automatic centering, shaftless unwind, equipped with a skew adjustment, edge guide, and a Cameron Model LHD disc-type, continuous duty unwind brake. The brake responds to signals from an extremely sensitive, air-operated tension sensing system which employs a mill roll follower (reacting to mill roll *payoff*) and a dancer roll (reacting to web *pull*).

Web pull is established by the automatically accelerated, variable speed main drive. Integrated roll control is further maintained by the use of two individually driven, automatically counterbalanced rewind shafts. Speed of the main drive controls the speed of the separate rewind drives. Added control of rewind drive speed is automatically actuated by increasing rewind roll diameter.

Oscillating razor type slitting elements assure cleanly cut, burnished strip edges. Combination surface and center winding is employed to wind the strip in alternate positions on the two rewind shafts. The differential winding principle is applied to permit each roll to adjust its winding speed to variations in diameter due to inconsistencies in caliper across the web. Thus, truly integrated roll control is maintained all the way from unwind to rewind. The result is a finished roll of superb new quality—*The New Roll.*

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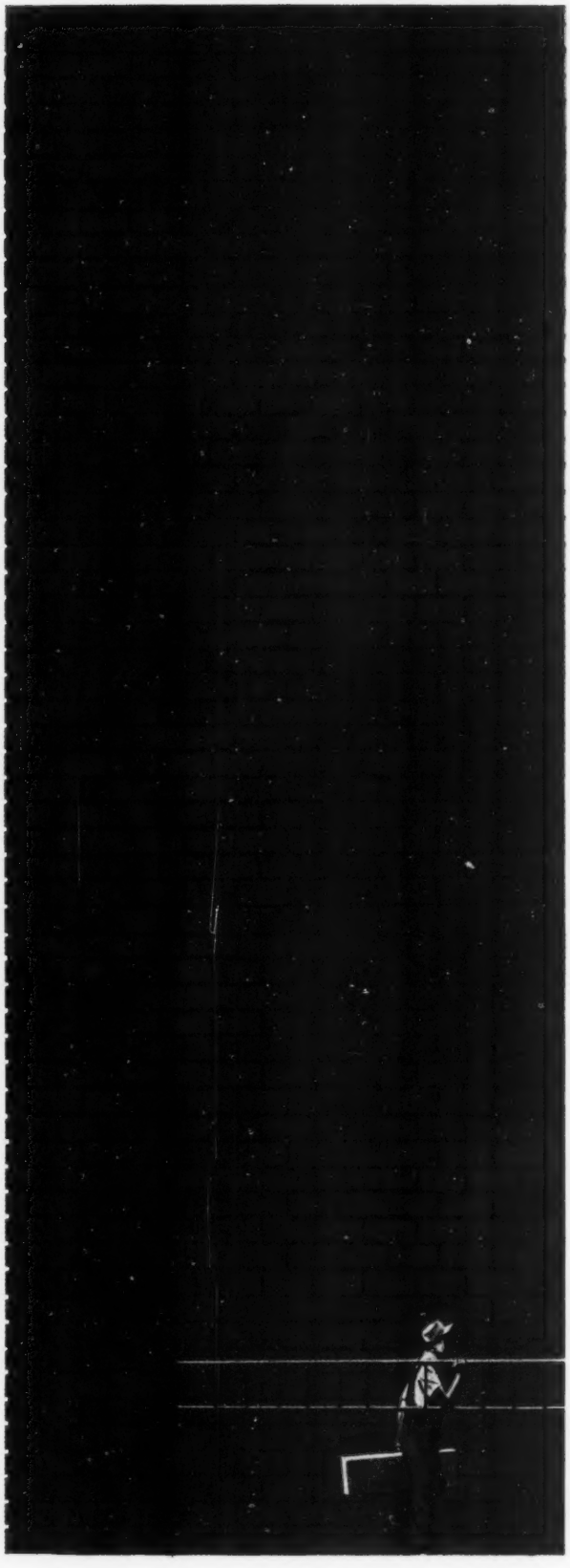

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# RISDON Aerosol Valves

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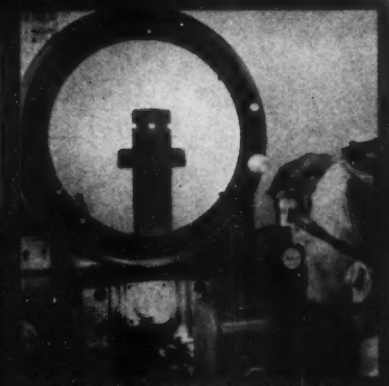
At left, inspector uses hydraulic tester to simulate pressure conditions of filling. Technician on right uses special, custom made gauge to check the orifice in an actuator.



A contour projector accurate to one-half thousandth of an inch enlarges silhouette of valve components up to 50 times for precise checking of dimensions and contour.

In the quality control test on the left, actuators are being examined under a microscope. On the right, orifices of "Micro-Mist" actuators are being checked with a pin gauge.

**THE RISDON VALVE LINE**
**includes**

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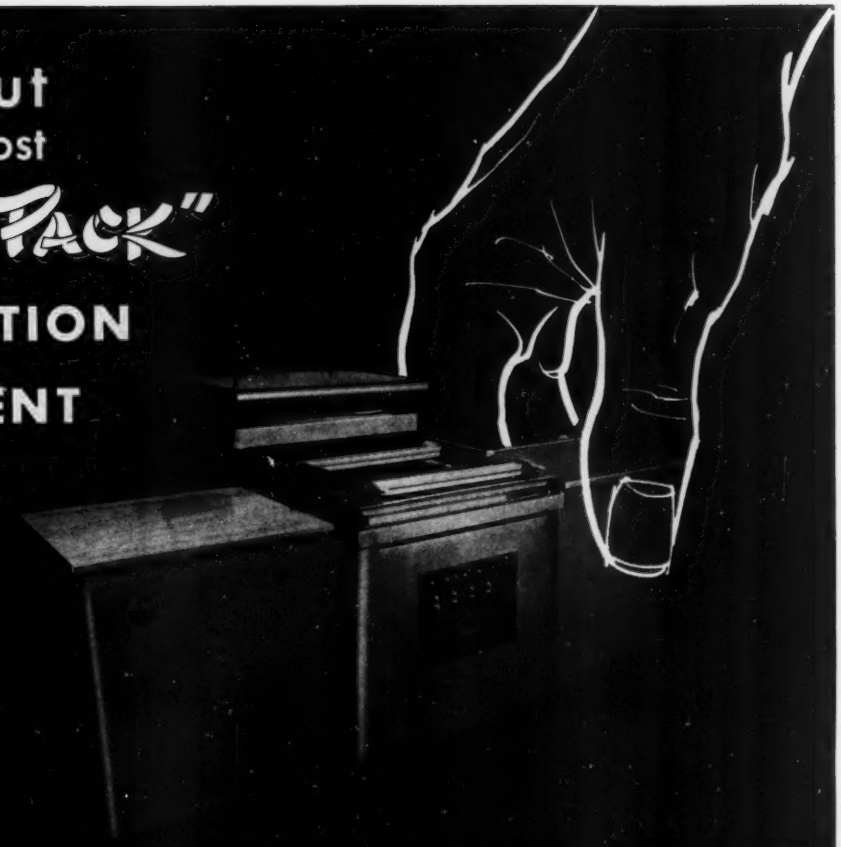

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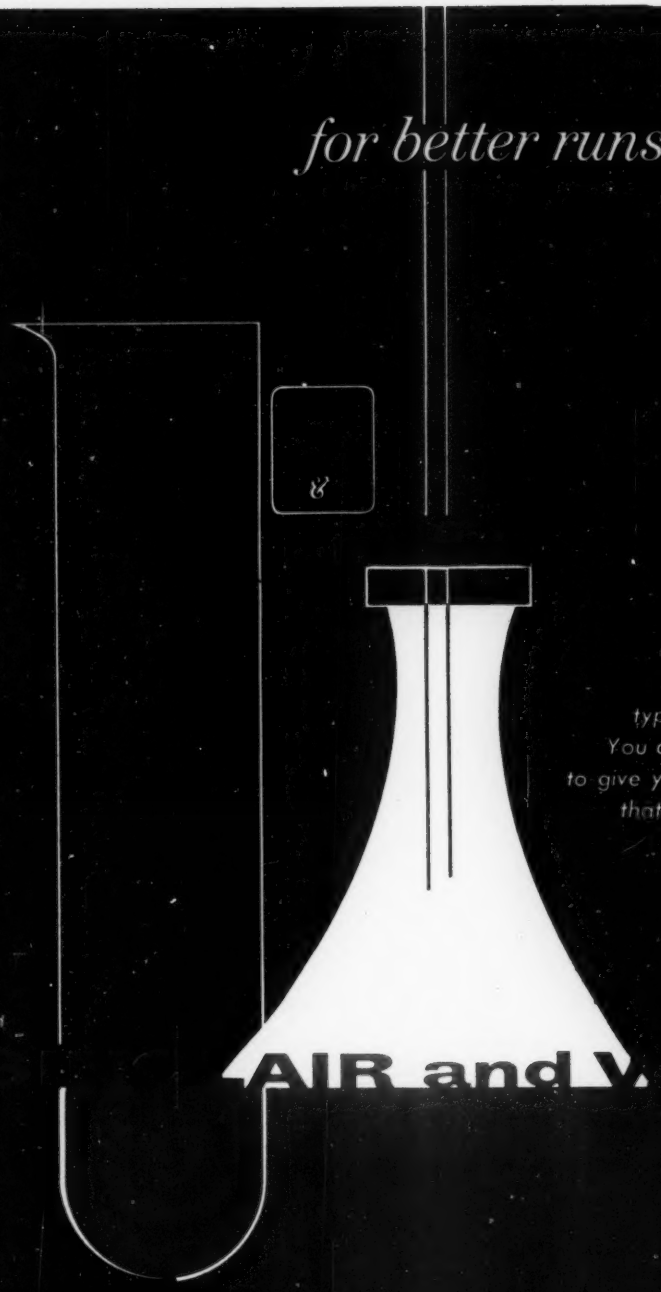

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**Beer at home . . . The KEGLINED* Story**

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To help boost your sales and profits, put Canco's aggressive team of research, manufacturing, and marketing experts to work for your products.

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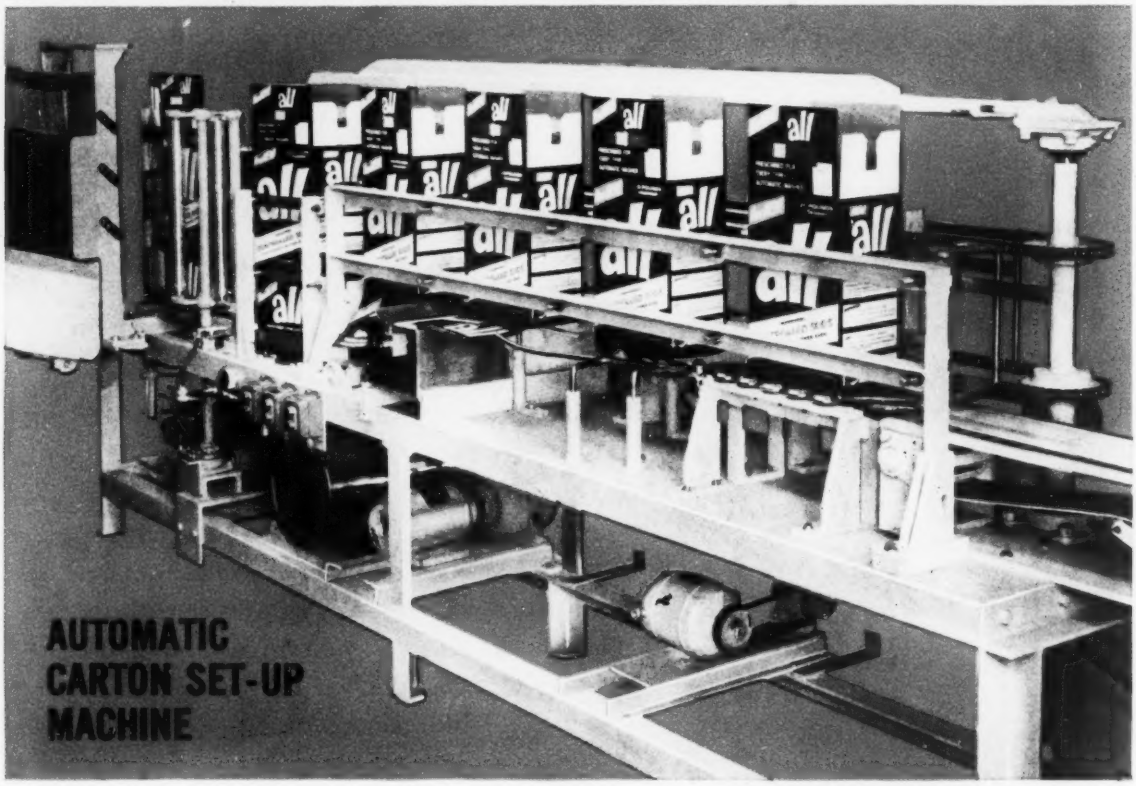
GREAT CONTAINER IDEAS COME FROM CANCO

CANCO DIVISION
AMERICAN CAN COMPANY

# photo-data sheet

*One of a series of* **PACKAGING SUCCESSES** *by* **Thiele Packaging Machinery Company**




**Problem:** To set-up automatically the large, 20 lb. cartons for ALL detergent. Hand set-up had been used because of the carton size—10" wide by 6¾" deep by 14½" high.

**Solution:** Thiele developed a line of automatic carton set-up machines to handle cartons as large as 14" wide by 8" deep by any height.

**Speed:** Up to 40 large cartons per minute.

**Location:** Lever Brothers Company plants at Baltimore and Los Angeles.

*Additional information: Write for Bulletin No. 500-1.*

| MODELS AVAILABLE | 5-150-05 | 5-80-10 | 5-40-20 |
|---|---|---|---|
| PACKAGE SIZES | | | |
| Maximum | 4" x 2" x –* | 6" x 4" x –* | 14" x 8" x –* |
| Minimum | 2" x 5/16" x 4" | 3" x ¾" x 8" | 6" x 2" x 10" |
| PRODUCTION SPEED (cartons per minute) | 150 | 80 | 40 |
| CARTON CENTER LINE SPACING | 5 | 10 | 20 |

*No limit on carton height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# 4 COMMON PROBLEMS IN LABELING CANS

## (and how the Arabol man helps you solve them)

1. THE LAP ENDS WRINKLE—This usually means that the varnished or foil side is drying at a different rate from the adhesive coated side. If your label stock has changed in some way, the Arabol man can straighten things out with a special, non-wrinkling adhesive. If spotty application is to blame, he may simply suggest a machine adjustment.

2. THE LAP ENDS WON'T HOLD—This may happen in your plant, or (worse luck) on the customer's shelf. One common cause is a change in the label stock, calling for an adjustment in your adhesive formula. Or perhaps the varnish has been carried over too far, leaving no selvage for the adhesive to grab onto. If so, a solvent-type adhesive is indicated. The Arabol man will know.

3. THE LABEL SHOWS "STRIKE THROUGH"—The difference in heat between the can and the adhesive may trigger a reaction which causes the adhesive to stain through the label. You may need a *harder* pick-up gum. Another possibility—a can has burst in the retort, spraying other cans around it with stain-producing material. The Arabol man will check every angle.

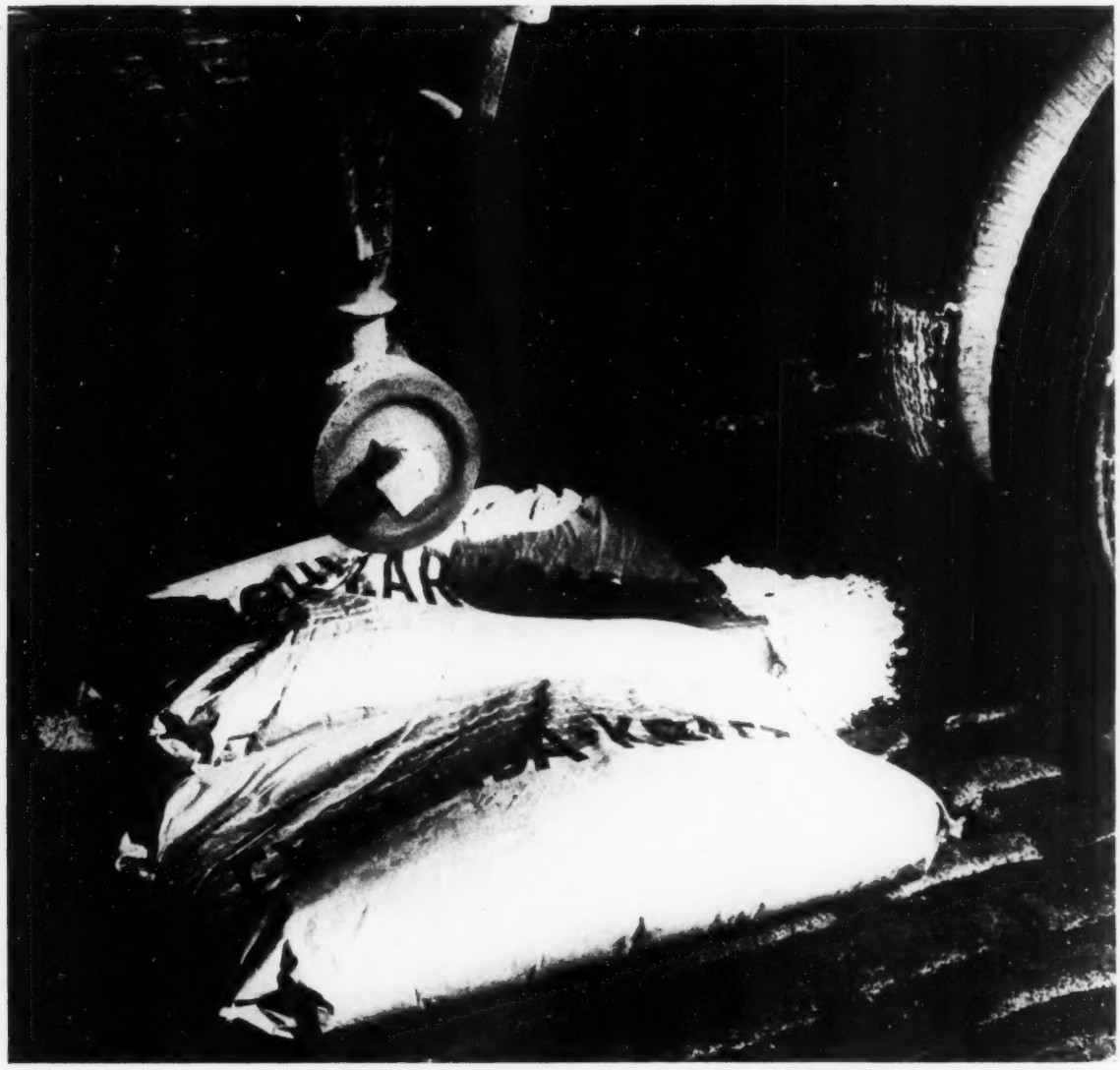
4. THE ADHESIVE "STRINGS"— Should your pick-up adhesive cool, it will thicken and "string" out from the roller. This usually happens when the thermostat on the machine fails to compensate for a temperature drop in the surrounding work area. Whatever the cause, it will pay you to get the Arabol man's advice.

THE BEST WAY to solve adhesive problems is to prevent them from happening. You can begin by telling us *all* the conditions your adhesive must meet—in your plant, in transit and after it reaches your customer. To help you understand these conditions more fully, we have prepared an interesting booklet that can save you no end of aggravation—and money. It's called "HOW TO BUY ADHESIVES—23 BASIC YARDSTICKS." Send for it today.

# ARABOL ADHESIVES

14 PLANTS AND WAREHOUSES TO SERVE YOU ON A LOCAL BASIS

THE ARABOL MFG. CO., 110 EAST 42ND STREET, NEW YORK 17, N. Y. • CHICAGO • SAN FRANCISCO LOS ANGELES • ST. LOUIS • ATLANTA • PHILADELPHIA • BOSTON • PORTLAND, ORE. • ITASCA AND McALLEN, TEX. • CINCINNATI • DENVER • TAMPA • LONDON, ENG.



# One bag broke . . . the other has two-way stretch

The one with stretch is made of H&W's new, high-strength Expanda Kraft.®

A large tractor-trailer ran over both bags of equal weight and plies. The regular kraft bag burst under pressure—see the tell-tale flour on the inside tire tread. But look at Expanda Kraft —*not a sign of breakage!*

Expanda Kraft is stronger, because it's made by a special roll-crepe process. It's resilient, has two-way stretch, and soaks up shock. And Expanda Kraft is available in white, semi-bleached and natural.

Expanda Kraft comes in 40, 50, 60, 70, 80 and 100-pound basis weights. *For samples and information*, write Hollingsworth & Whitney, Division of Scott Paper Company, Chester, Pa.

**HOLLINGSWORTH & WHITNEY** DIVISION OF
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# BARTELT

## packaging machinery is on the job for...

# Lipton

Lipton Soups . . . family favorites, because of their savory home-cooked taste, the new mix way . . . go to market protected by packages of the highest standards . . . packages fabricated automatically by Bartelt Packaging Production Lines.

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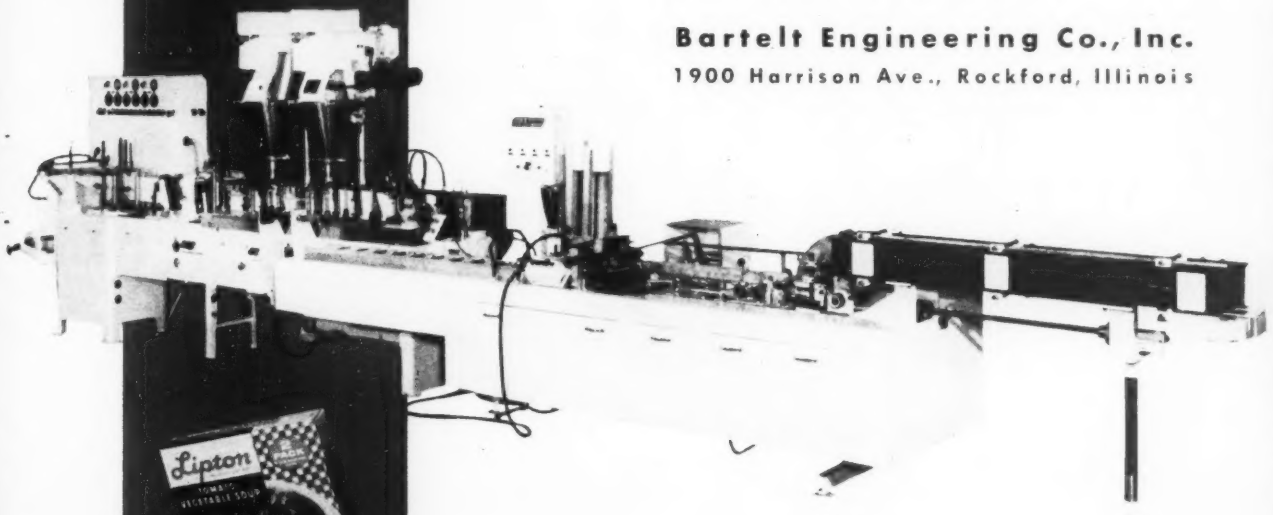
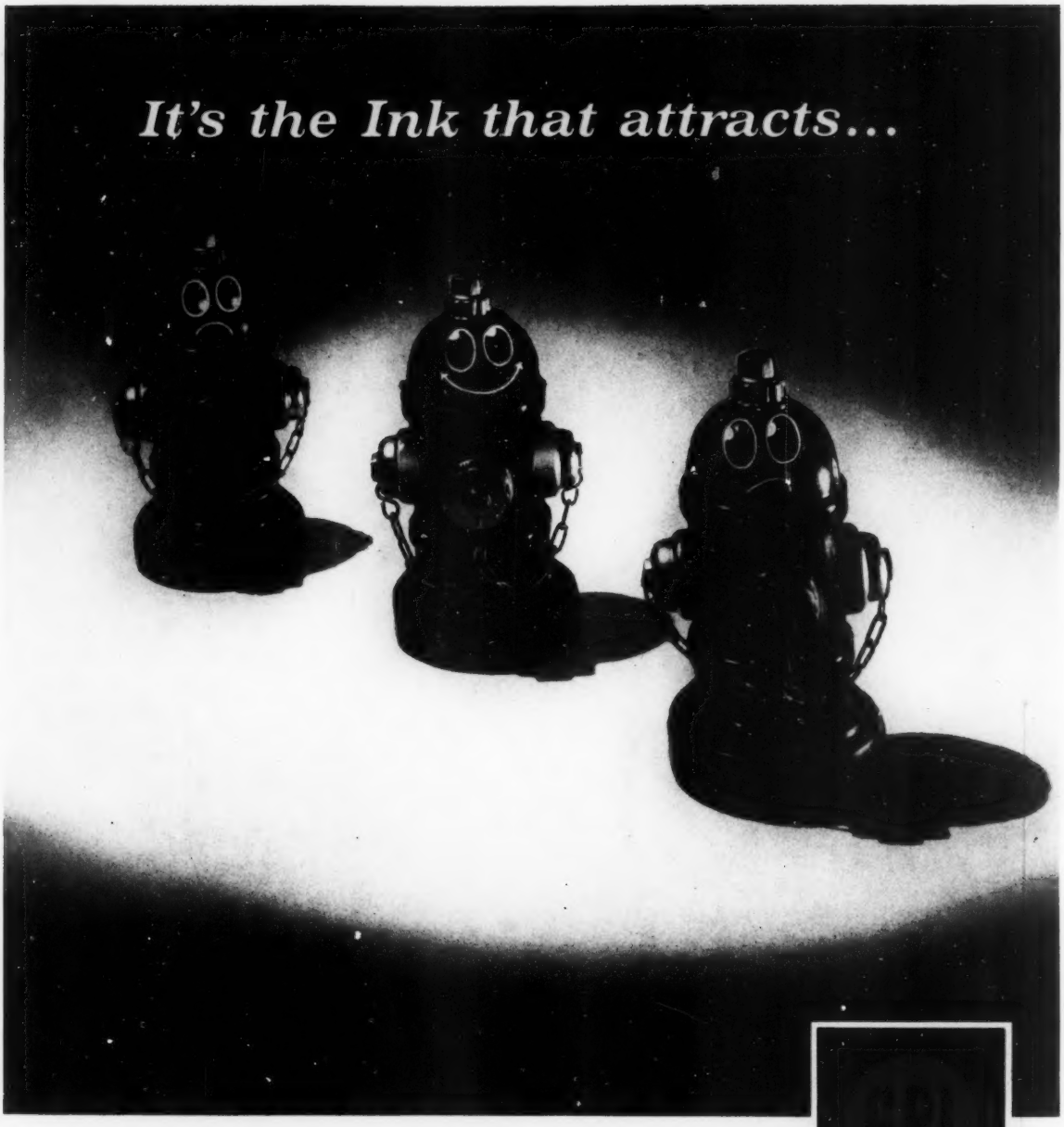
**Bartelt Engineering Co., Inc.**
**1900 Harrison Ave., Rockford, Illinois**






## IDENTIFY and BEAUTIFY with

**PRINTING INKS** can help *pump* up the sales of your product, package or promotion. That's why it's so important to use the *right* printing inks—right in color, right in quality, right in cost and right in *performance*. Inks that are outstanding, both on the press and on the end product. Let GPI help you to attract and *hold* customers. Simply call or write.

GPI Sun

**GENERAL PRINTING INK**
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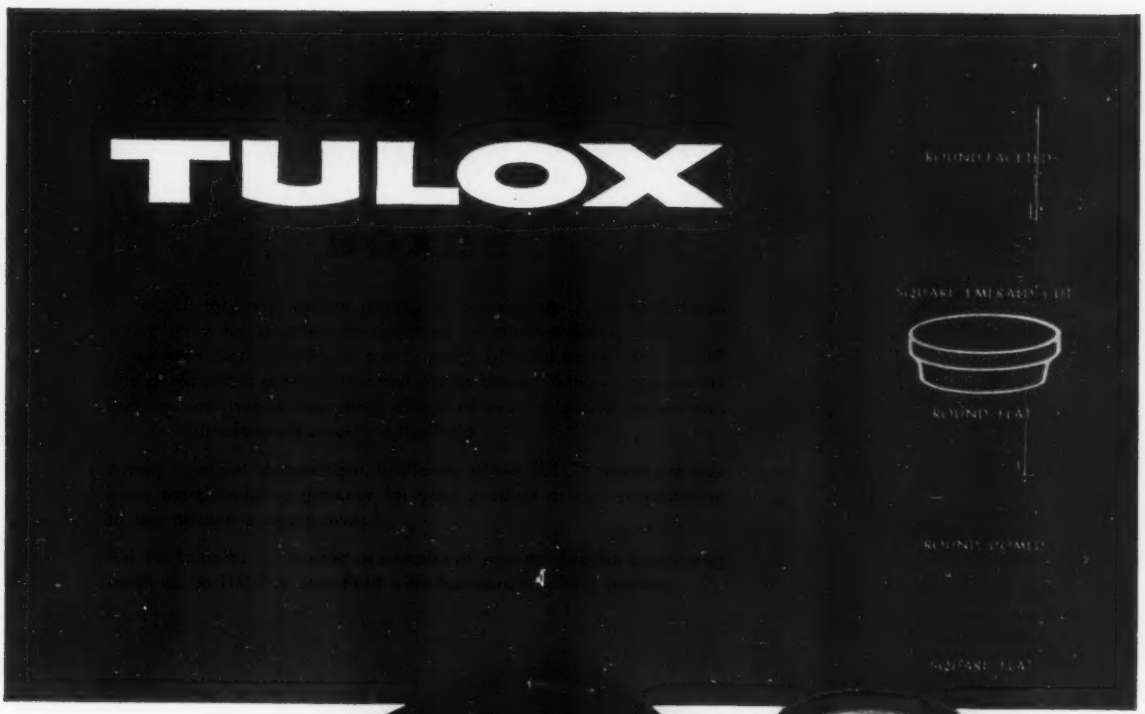
Branches in all principal cities

# TULOX



- Semi-rigid, yet feather light in weight
- Shatterproof . . . and highly scuff-resistant
- Crystal-clear or twin-tone colors
- Wide product view . . . exceptional display
- "Mix or match" tops and bases
- Wide choice of style-right color plans
- Plain or decorated to your needs
- Standard or custom design
- Bases straight sided or "stepped" for card insert
- Precision fit . . . easy to load and assemble
- PRODUCTION READY NOW . . . yet proved in the market place

☐ Send me samples and prices of new **TULOX** boxes.
☐ I am sending samples of my products.

**Name** _____

**Title** _____

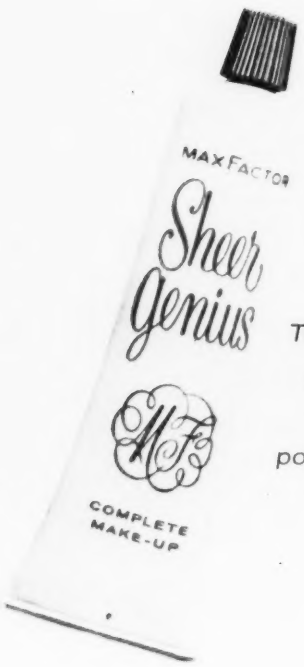
**Firm** _____

**Address** _____

**Nature of Products** _____

**EXTRUDED PLASTICS,** INC.
*General Offices: Norwalk, Conn.*
*Plants: Norwalk, Conn., Marion, Ind.*
*In Canada: Twinpak Ltd., Montreal, Toronto*

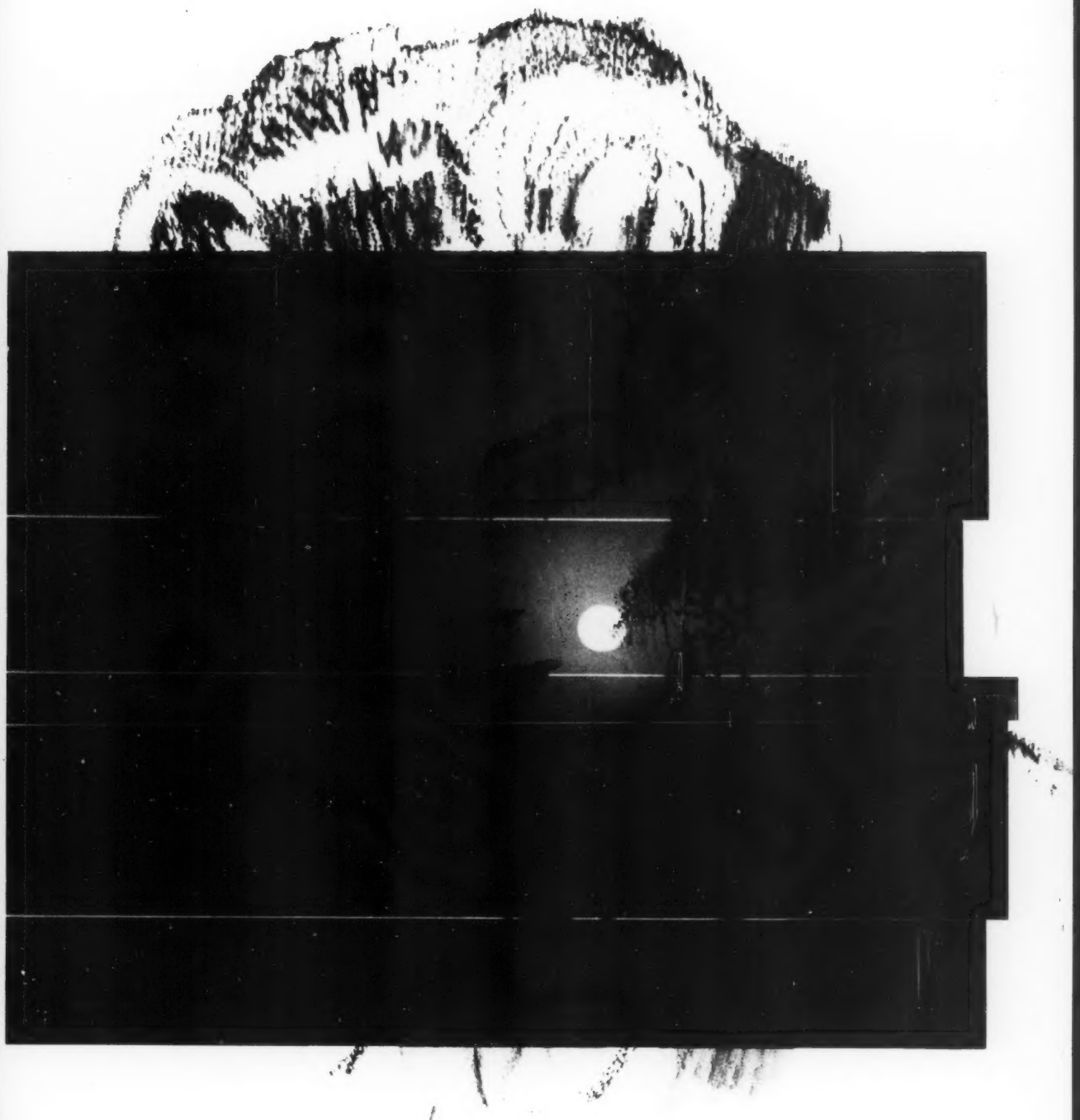
3EP60




*The package is your product at the point-of-sale !*

**Dawn of a New Make-up . . . "Sheer Genius"** / Max Factor's incredible new cosmetic is just what the name implies . . . a complete make-up in liquid form. A new product and a packaging first! A captivating, blue and gold plastic tube, with cap to match, is furnished by Bradley-Sun for the ultimate in neatness, protection and allure. Shouldn't you investigate the unique advantages which Bradley-Sun packaging can bring to your products?

*Division of*



American Can Company, Hillside, New Jersey / Sun Tube of Canada, Ltd. Ottawa, Ontario

BRADLEY Sun

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Engraved rollers by CONSOLIDATED ENGRAVERS insure economical quality controlled applications of any fluids for fine printing and converting.

- Mill engraved by master craftsmen
- Special cell patterns to suit your application requirements
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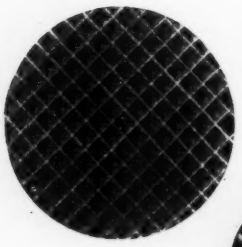
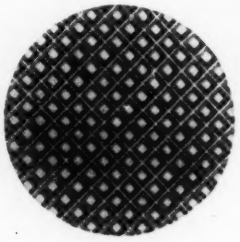
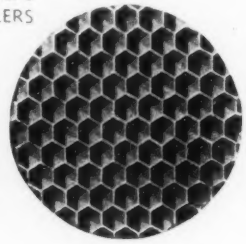
- Fastest delivery in the roll engraving industry

Request further information and a sales engineer's visit at your convenience.

APPLICATOR ROLLERS • ROTOGRAVURE CYLINDERS
EMBOSSING ROLLERS • TEXTILE PRINTING ROLLERS







**CONSOLIDATED ENGRAVERS**

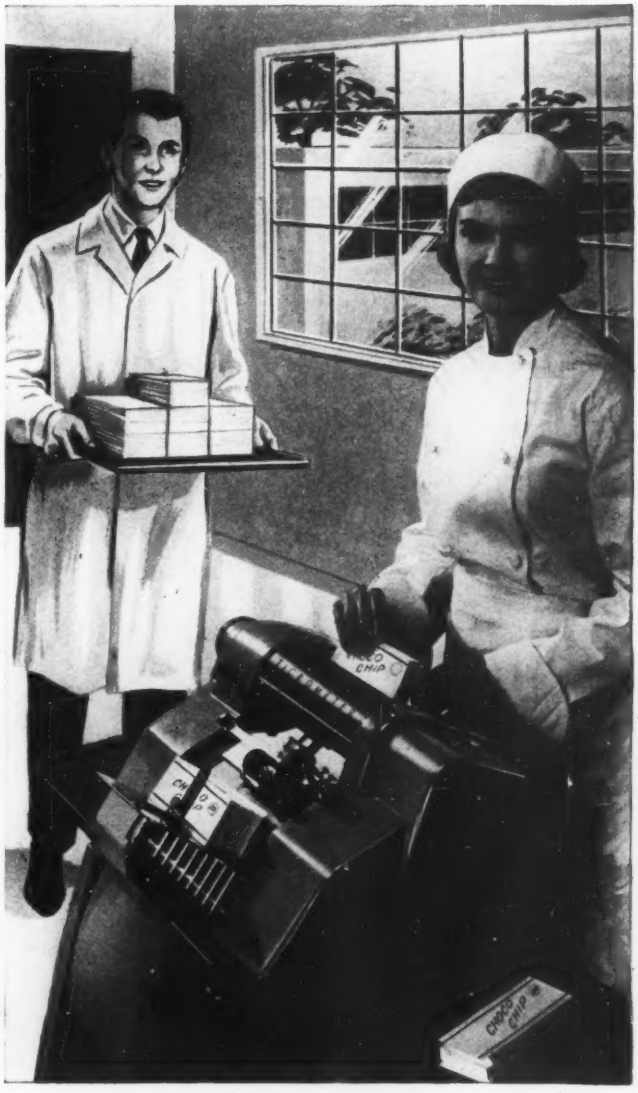
division of AMERICAN-MARIETTA CO.
311 East 12th Street • Charlotte, N. C.

# Label changes

## without printing new labels

*Availability of supplies and fluctuating prices often clutter up stockrooms with obsolete pre-printed packaging materials. Thousands of firms have been able to avoid this all-too-common waste by imprinting prices and mandatory data on labels or small cartons as they are needed—with a Tickometer.*

- A few minutes is usually sufficient to imprint labels and wrappers needed for a day's production. The Tickometer will imprint specifications, weights, colors, sizes, serial numbers, codes, etc., on most weights and finishes of paper and light board in sizes from 1 by 2 up to 15 by 15 inches—from 400 to 1,000 a minute.
- It can save time and work in marking, stamping, endorsing, dating or canceling forms, checks, coupons, tags, tickets, cards, etc. It also counts—*is so accurate that banks even use it to count currency.* Can be set for a predetermined count, to give partial amounts or totals, or equipped for consecutive numbering.
- Feeds and stacks automatically, is easy to operate, can be used by anybody. May be rented or bought, with Pitney-Bowes service always available from 320 points.
- Call the nearest Pitney-Bowes office for a demonstration. Or send coupon for free illustrated booklet and case studies.



**Model 4800 Package Imprinter**

Imprints folding cartons, containers, bags, etc. up to 7,500 an hour, as needed—reducing inventories and waste. No tools required, can be operated by anybody. Ask for a demonstration, or send coupon.

Pitney-Bowes

TICKOMETER

**Imprinting & Counting Machine**

*Made by the originator of the postage meter . . .*
*139 offices in U.S. and Canada.*

PITNEY-BOWES, INC.
4836A Walnut Street
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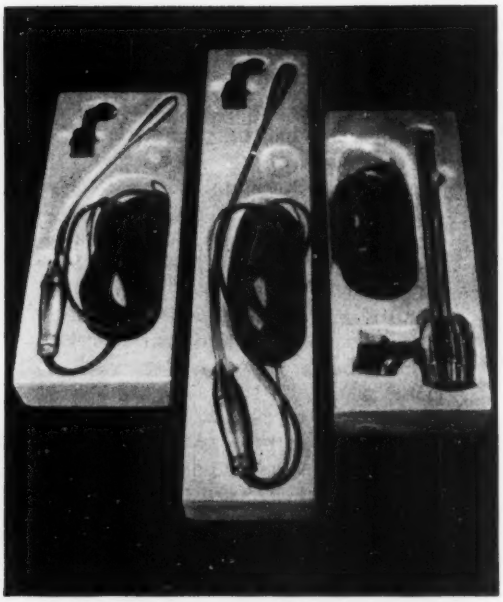
*Send free illustrated booklet and case studies on:*
☐ *Tickometer* ☐ *Package Imprinter*

*Name* _____

*Address* _____

## DYLITE protects acid bottles.

This DYLITE package gave the Allied Chemical Corporation better, lower-cost protection than was possible with previous packaging materials. The octagonal-molded block cushions the 13-gallon acid carboys, it protects them from vibration and impact damage. The package is completely ship-safe. Around the plastic package is a wooden shell bound by wire. The container is lighter, takes up less space, and saves packaging and shipping costs. At the 1960 Industrial Packaging Competition sponsored by the Society of Packaging and Handling Engineers, this new DYLITE package won the "best of show" award. *Molded by General Chemical Division, Allied Chemical Corporation.*

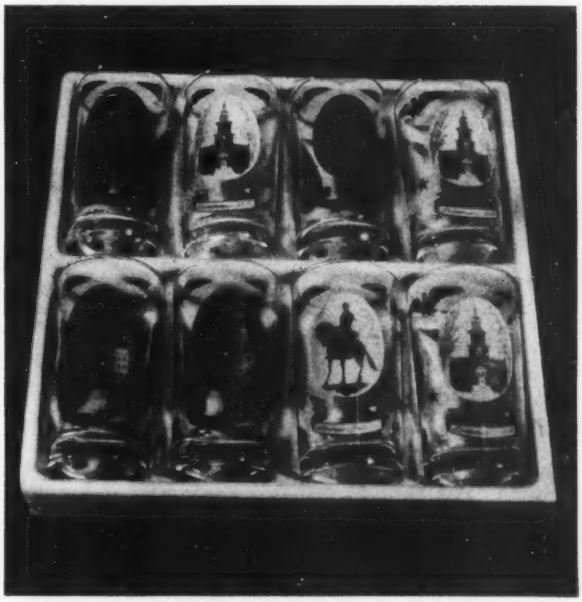


## . . . insures a safe and sound mike.

Because of its unusual shape and sensitive parts, this microphone presented a definite packaging problem. Shock-resistant DYLITE was chosen because it molds easily, to *any* size or shape. The DYLITE is custom-molded to tightly fit the contours of the instrument. The microphone is held firmly in place, safe from shipping damage. DYLITE offers complete packaging protection for any sensitive, delicate instrument and its component parts. *Molded by Formex Corporation of Elkhart, Indiana. Microphone manufactured by Electro-Voice, Inc., of Buchanan, Michigan.*

# Protect your product with low-cost DYLITE® packaging!

Here's a packaging material . . . DYLITE expandable polystyrene . . . that combines all the ingredients of good protective packaging. DYLITE is lightweight, strong, and shock-resistant. It is low-cost and makes a better-looking package. Here are three good examples of DYLITE packages.



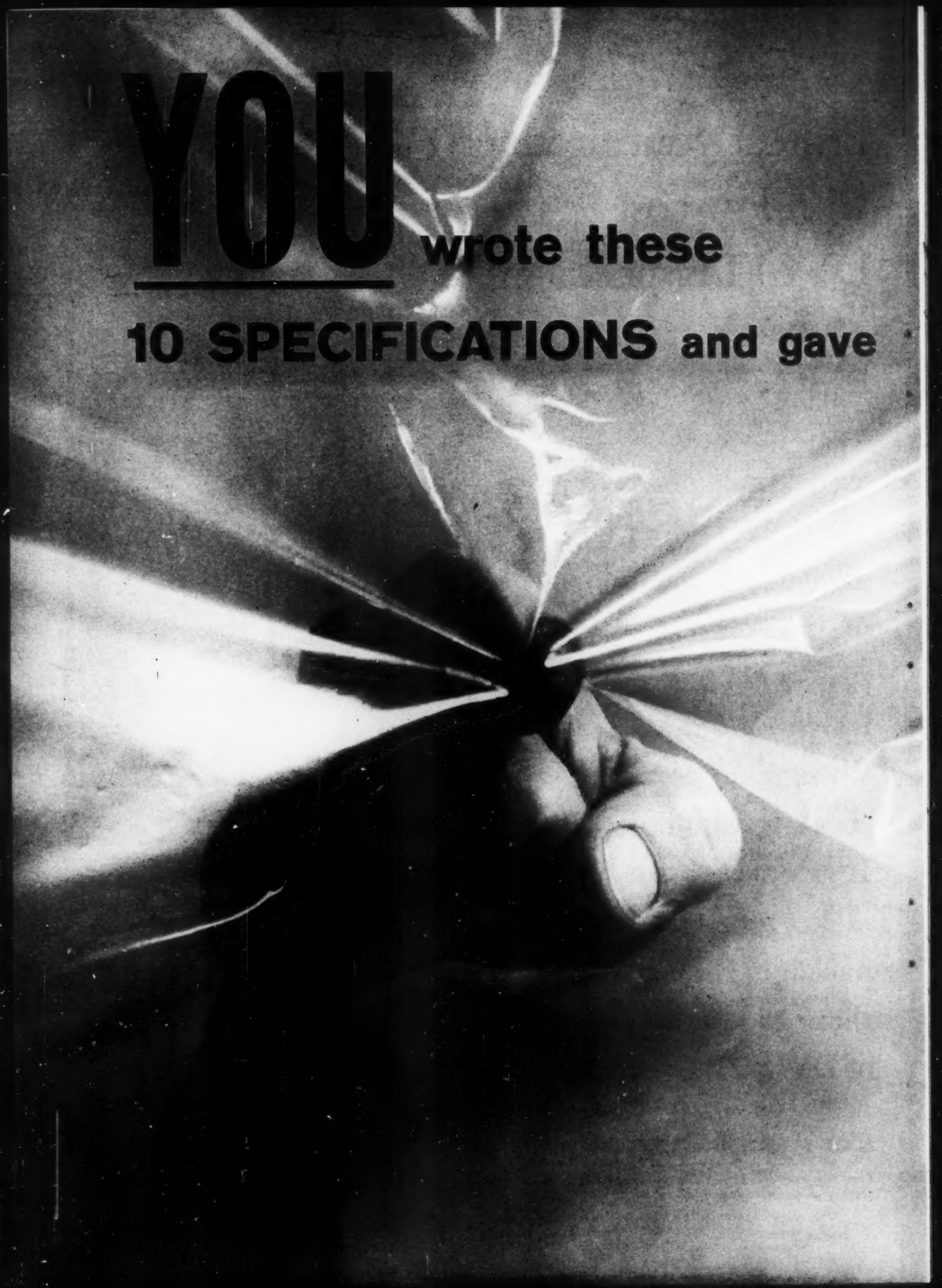
**. . . keeps eight tumblers intact.**

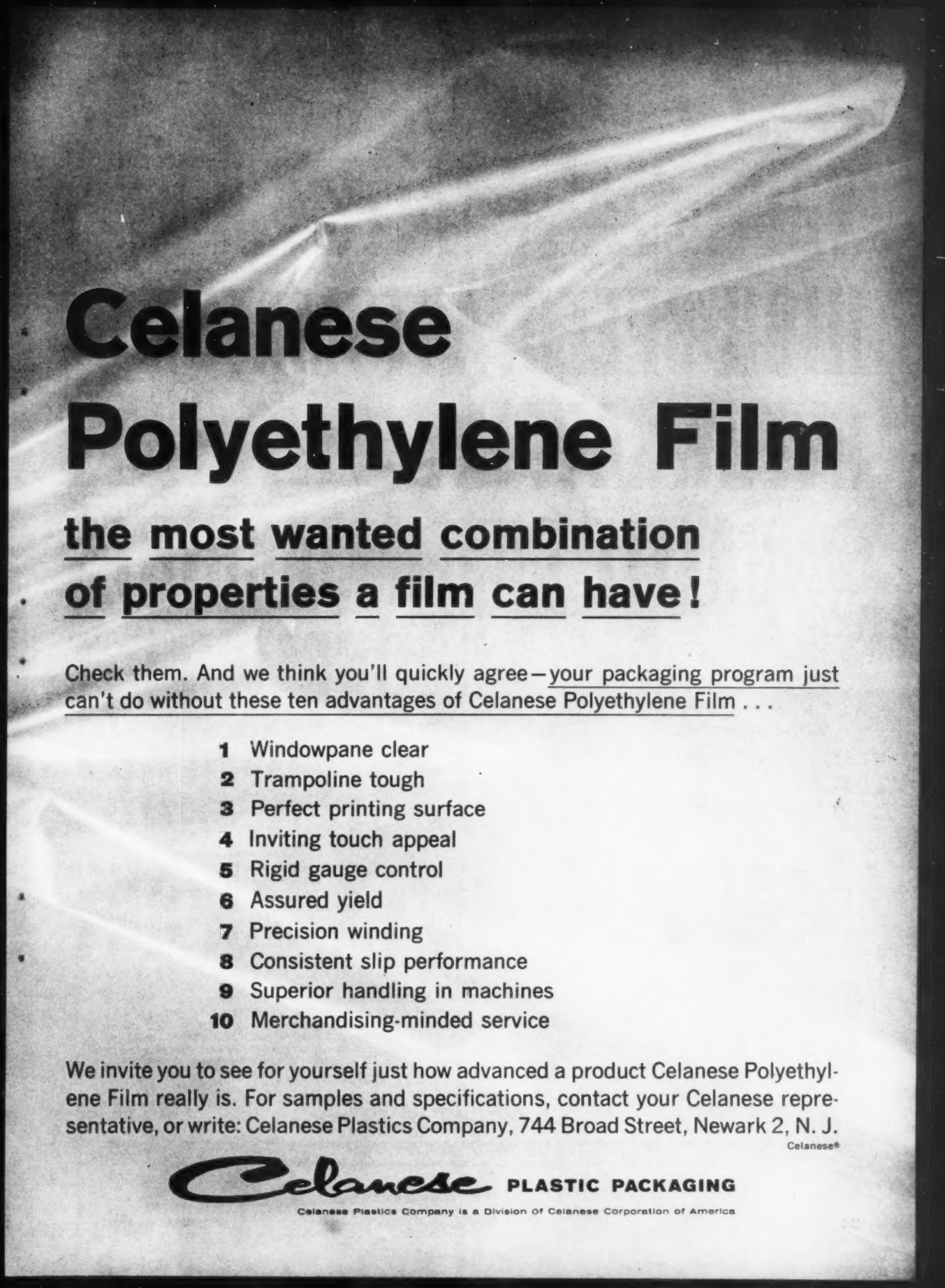
Here's a package that's attractive as well as protective; it gives the product added sales appeal. And these 10-ounce, Americana-patterned tumblers fit snugly in the molded DYLITE tray. There's no vibration, no glass breakage. Versatile DYLITE is used for packaging many products: typewriters, radios, precision instruments, cameras, musical instruments, tools, and many others. DYLITE can make your next product package better at lower cost. **For more information on DYLITE expandable polystyrene, write Koppers Company, Inc., Dept. MPG 1104, Pittsburgh 19, Pa.**

*Tray molded by Expandable Plastics, Akron, Ohio.*
*Tumblers by Libbey Glass, Toledo, Ohio.*

**KOPPERS PLASTICS**

Koppers also makes these other fine plastics for packaging: DYLENE® polystyrene, DYLAN® polyethylene, SUPER DYLAN® polyethylene.


YOU wrote these
10 SPECIFICATIONS and gave



# Celanese Polyethylene Film

## the most wanted combination of properties a film can have!

Check them. And we think you'll quickly agree—your packaging program just can't do without these ten advantages of Celanese Polyethylene Film . . .

1. Windowpane clear
2. Trampoline tough
3. Perfect printing surface
4. Inviting touch appeal
5. Rigid gauge control
6. Assured yield
7. Precision winding
8. Consistent slip performance
9. Superior handling in machines
10. Merchandising-minded service

We invite you to see for yourself just how advanced a product Celanese Polyethylene Film really is. For samples and specifications, contact your Celanese representative, or write: Celanese Plastics Company, 744 Broad Street, Newark 2, N. J.

Celanese®

Celanese PLASTIC PACKAGING

Celanese Plastics Company is a Division of Celanese Corporation of America

# IF ANY OPERATION IN YOUR PLANT CALLS FOR HIGH-SPEED, AUTOMATIC OVERWRAPPING...

# BATTLE CREEK MACHINES CAN PROBABLY DO IT BETTER, FASTER, MORE ECONOMICALLY THAN ANY OTHER

Periodic re-orders of the Model 43 by satisfied customers mirror its unique versatility, efficiency and reliability. Products are not just wrapped . . . they are transformed into individual merchandise "show-cases". At speeds of 45 to 75 per minute, the Model 43 overwraps in printed or unprinted cellophane such diverse items as loose cookies, small baked goods, iced cakes, pre-packaged meats, textile articles, envelopes and clothespins. Utilizes either an underneath or end fold, and the product size range is 3" to 10" lengths, 1¼" to 4½" widths and ½" to 4" heights. Write for details today

*Continuous Flow*® PACKAGING

**BATTLE CREEK** *packaging machines, inc.*, BATTLE CREEK, MICH.

**Disposable aprons** of polyethylene-coated perforated and embossed paper were tested in the galleys of a rig by an offshore oil drill company to determine their utility. The aprons are said to protect against grease spatterings, and withstand the normal soiling encountered in meal preparation. The expense of handling and transporting soiled cloth aprons back to the mainland and laundry costs are eliminated by the disposable apron.

---

**Storage drums of conventional polyethylene,** accepted by FDA for use with foods, can now be obtained in 20-, 32- and 55-gallon sizes with or without dust covers. Air-tight polyethylene covers and steel closure rings are available for the 55-gallon size, also.

According to the manufacturer, drums are clean, white, lightweight and quiet; have excellent impact resistance; nest for storage; will handle most jobs of stainless steel drums, yet cost less. Other applications include storing supplies, emergency water, sterile linens and clothing, and chemicals.

---

**One-Gallon Jug** fabricated of conventional polyethylene has pouring spout set off-center to allow a large carrying handle on top. A tail on the handle permits using the little finger to get a tighter hold.

According to the producer, this redesigned jug, which is the same price as a previous model made by the company, has a stronger spout and body and is more stable. Closures are claimed to be skip-proof and leak-proof.

---

**New end label for polyethylene bread wrap** claimed to have exceptional adhesive qualities requires only moderate heat for positive closure. The coating is activated by approximately 150°F.–40° lower than the temperature needed by comparable heat-seal end labels. (The heat from an ignited cigarette is said to be sufficient.) This quick-melt coating eliminates melted or pinhole burned polyethylene. It remains tacky after wrapper is opened and, reportedly, retains its strength through numerous reclosures. Labels are of a newly-developed paper stock allowing improved ink coverage.

# U.S.I. Sees Use of Polyethylene Up In 1961

## Increases Anticipated in Many Market Areas

"In 1961, polyethylene will regain much of the sales momentum that characterized its dynamic growth in the late 1950's," forecasts Vincent D. McCarthy, Director of Plastic Sales of the U.S. Industrial Chemicals Co. U.S.I., manufacturer of PETROTHENE resins, is the world's second largest producer of polyethylene.

Vincent D. McCarthy, U.S.I.'s Director of Plastic Sales, shown examining a sample of polyethylene film, expects polyethylene usage to increase close to 10% in 1961.

Mr. McCarthy predicts a rise in usage approaching 10% for 1961, indicating that a number of fast-growing markets will make it possible.

The demand for film and sheeting of conventional polyethylene, for example, is expected to increase to 465 million lbs. in 1961 compared with the 400 million lbs. used last year. Spurred by wider use of inplant automatic polyethylene packaging equipment, this material has made steady inroads in breadwrap, produce, textile, and other fields. Automatic equipment in use is typified by the See-Safe machine, with which even outsize products such as card tables and bolts of cloth can be custom-packaged efficiently in polyethylene.

Additional conventional polyethylene, perhaps as much as 75 million lbs., can be expected to go into coating this year. Polyethylene coated milk cartons will lead the growth in the fast moving extrusion coating fields.

### Blow Molding To Gain

According to Mr. McCarthy, blow molding, now a 50-million lbs.-per-year market, will climb faster in '61 and eventually rank with injection molding (now consuming 250 million lbs. of conventional polyethylene yearly). He sees a shift developing from low-density to medium-density polyethylene in this field, but feels the 1961 sales upturn will be shared by linear polyethylene.

Pipe and wire and cable insulation are among other markets for conventional polyethylene which are each expected to contribute an increase of about 5% in usage to the brighter '61 sales picture.

---

## Sports Megaphones Injection Molded Of Polyethylene

Megaphones for sports fans are being injection molded of a U.S.I. PETROTHENE polyethylene resin by an Ohio firm. According to the company, PETROTHENE 208 resin was chosen because of its uniformity, and because it provides good gloss and durability, flows better than competitive materials, and gives better than average results with dry coloring.

Available in a variety of colors with contrasting hot-stamped collegiate emblems, the megaphones are reported to withstand constant squeezing and handling and a wide range of weather conditions.

IF YOU WOULD LIKE further information on any developments reported in U.S.I. Polyethylene News, U.S.I. will be glad to send you the names of the manufacturers. U.S.I. also invites you to send information on your new developments for possible inclusion in the News.

Address the Editor,
U.S.I. Polyethylene News, U.S. Industrial Chemicals Co.,
99 Park Avenue, New York 16, New York.

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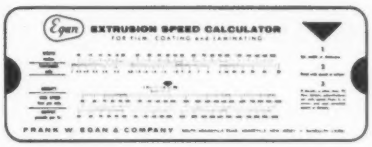
## Free Slide Chart Offered




A handy extrusion speed calculator for film, coating and laminating is available from a manufacturer of extrusion coaters. With this slide rule, the extrusion capacity required for a specific web speed, width and coating thickness can be quickly determined.

# MORE AND MORE... SHE REACHES FOR A POLYETHYLENE-COATED CONTAINER

Milk cartons, other dairy containers that don't leak . . . don't flake . . . don't get scuffed. Bakery packages that remain clean . . . free of grease stains. Frozen food boxes that stay tight . . . bright . . . invite. That's what the consumer wants, and that's what the consumer buys.

Packages made of polyethylene-coated paperboard meet these consumer specifications. You'll find that polyethylene-coated board meets your production requirements, too—in printability, heat-sealability, economy.

U.S.I. has developed special PETROTHENE® polyethylene coating resins for food packaging applications. Ask your supplier about the superior moisture resistance, greaseproofness, toughness, smoothness of these packaging materials. He'll be glad to show you how they can keep the consumer reaching for your product.

U.S.I. INDUSTRIAL CHEMICALS CO.
Division of National Distillers and Chemical Corp.
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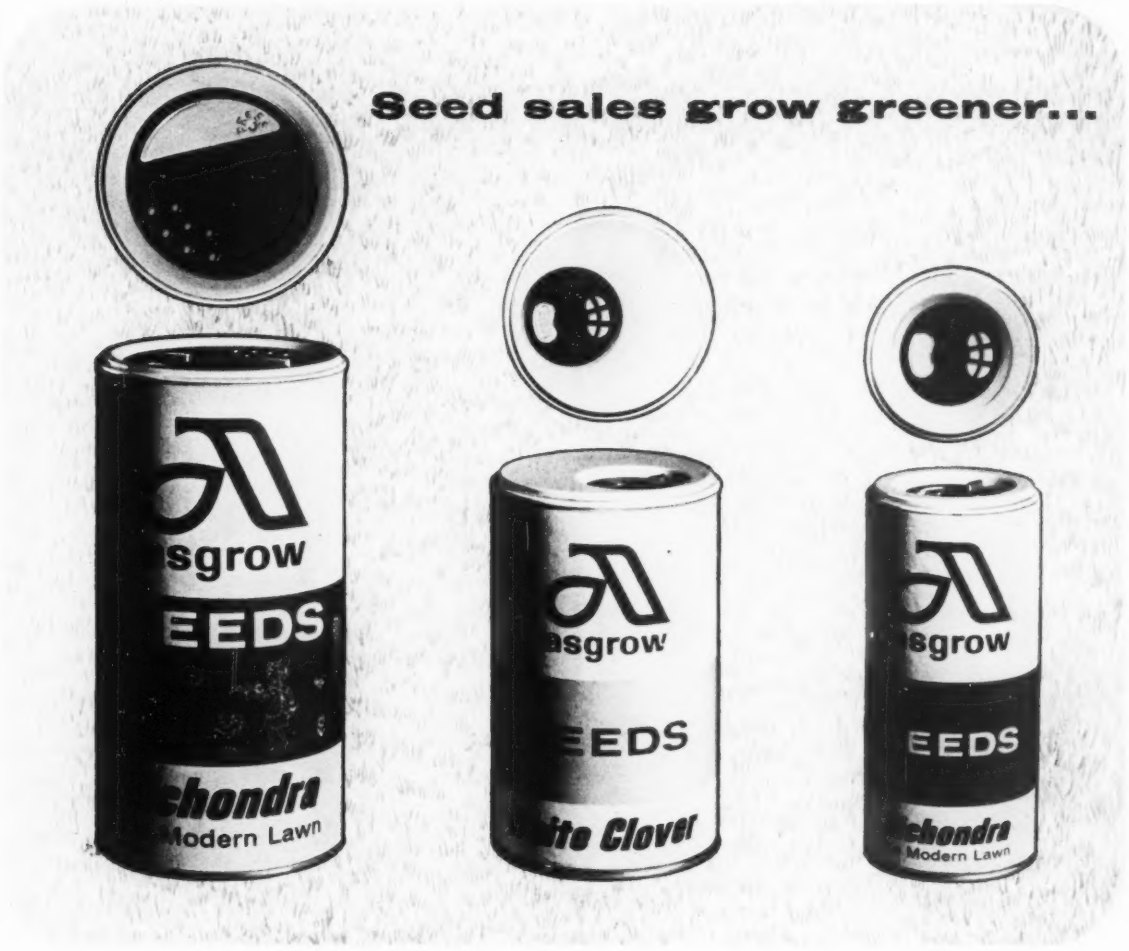


# for Asgrow with Cleveland Containers

The Asgrow Seed Company, whose famous products are sold all over the world, chose the above containers for some of their select seeds. Displaying Asgrow's new trade-mark, these functionally styled containers offer the latest in progressive packaging. Shown are the 1 lb., ½ lb., and ¼ lb. sizes. Made of quality fibreboard with metal bottoms, each has its own distinctive plastic closure which pours, sifts, or can be closed with just the flick of a finger.

These smartly designed containers play an important part in upgrading a product. Sturdy construction and the new patented plastic tops with the stacking feature and correct sifting designs ensure customers' acceptance — and all at low unit cost! We will be glad to help you in adapting these outstanding features to your own special needs. Call or write our nearest plant for complete information.

*Write for a copy of our NEW Packaging Brochure.*

THE

## CLEVELAND CONTAINER COMPANY

6201 BARBERTON AVE. • CLEVELAND 2, OHIO

ALL-FIBRE CANS • COMBINATION METAL AND PAPER CANS
SPIRALLY WOUND TUBES AND CORES FOR ALL PURPOSES

CLEVELAND CONTAINER CANADA, LIMITED
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**Plants and Sales Offices:**
Cleveland
Detroit
Chicago
Memphis
Dallas
Los Angeles
Plymouth, Wis.
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**Sales Offices:**
New York City
Washington, D.C.
Rochester, N. Y.
West Hartford, Conn.
•
Abrasive Division at Cleveland

# Look what's new in food packaging

**A HANDSOME DECANTER FOR MUSSELMAN'S.** The order: A good-looking decanter for sweet cider . . . one that would double as a handy reusable refrigerator bottle. Here it is! Customers say the bottle is easy to hold and nicely balanced for pouring. Musselman's like the large label area for quick brand recognition. In fact, everyone is pleased. You can expect results like these when you have your bottle designed and produced by Armstrong.

**Armstrong PACKAGING**

WATCH ARMSTRONG CIRCLE THEATRE EVERY OTHER WEDNESDAY EVENING ON CBS-TV

# Background for Packaging

*Notes, quotes and comments, an editorial feature*

**It's time to consider** your gift-packaging programs for next year. Family gift expenditures for Christmas this year averaged $147 per family, for a total of $7,350,000,000, according to a survey by Chicago Printed String Co. But Christmas represents only 41% of the total gift-giving market, the survey points out. The year-round total may be close to $18 billion a year, which would represent 14% of estimated 1960 discretionary income and 5% of disposable personal income.

**New Year's emphasis** on improvements and economies in packaging is apparent in the drug industry. Says *Drug Trade News:* "We predict that during 1961 no phase of our industrial operations will enjoy a more concentrated activity than that associated with changes in packaging. . . . There's no doubt that packaging decisions will assume the importance heretofore occupied by product development and marketing patterns."

**Polypropylene grows faster** than any other plastic ever introduced. The latest announcement of an 80-million-pound Shell plant boosts potential U.S. capacity by 1962 to 550 million pounds per year. It took polyethylene 13 years to reach that level. Total polypropylene capacity now in place is 100 million pounds per year, with the list of current and soon-to-be producers including, besides Shell Chemical, Hercules, AviSun, Humble, Dow, Eastman, Novamont (Montecatini), Firestone, Phillips and Rexall-El Paso.

**Mistakes can happen** even to the most careful packagers. Recently Procter & Gamble launched a nationwide promotion on Duz, with a piece of china enclosed in each box. The idea was to keep consumers buying until they had acquired a complete set. Just one oversight: The promotional label failed to identify just *what* piece of china was inside and P&G was deluged with complaints from consumers who said they were getting all plates or all cups. All advertising had to be canceled and packages pulled back until the mistake could be corrected.

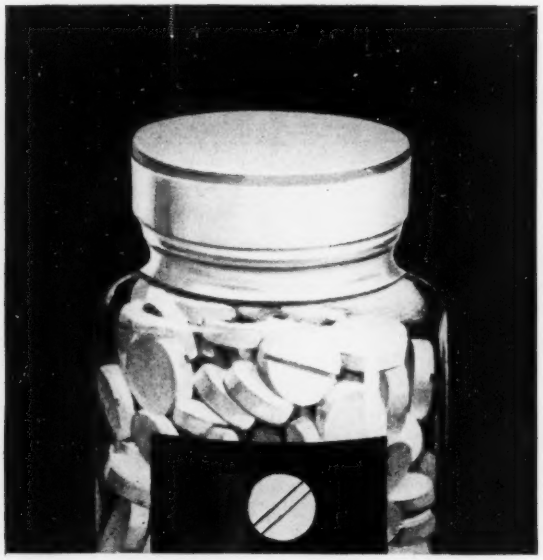
**The baby boom** is on again, creating rosy prospects for the producers of baby foods and their suppliers of cans and jars. Industry forecasters predict retail sales of baby foods will rise from present record $270 million a year to $500 million by 1970, which means a production rate of 3⅓ billion packages per year. Other packagers of infant supplies take note.

**Plastic shipping bags,** expected to be a formidable competitor for paper multiwalls, have run into delays because of packagers' problems in changing over filling and sealing lines. Doughnut Corp. of America, for example, has tested 6- and 7-mil polyethylene bags quite successfully for bulk doughnut mix, but expects it will be several months before it can make the necessary equipment change for full production. Meanwhile, note the use of PVC bags by two large Italian chemical companies, who have found PVC less costly (over there) and with some performance advantages.

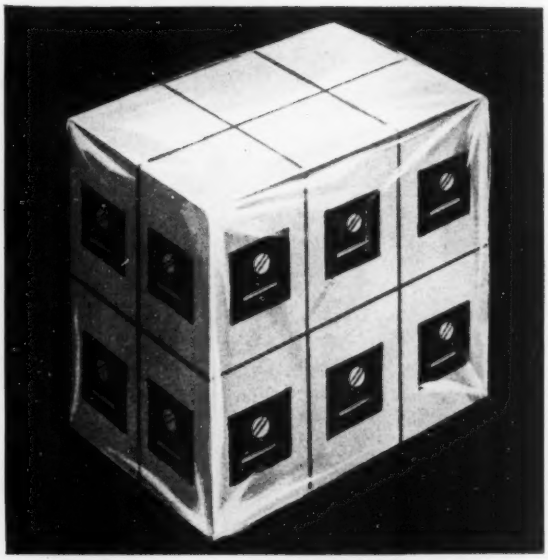
**Federal enforcement** of F&DA rules is likely to be carried on vigorously under new Welfare Secretary Ribicoff, a lawyer and a forceful administrator. Eye-opening development last month was Federal seizure of 30,000 packages of professional-type vitamin and mineral preparations at E. R. Squibb, including some of the company's best-known brand names, on the grounds that they were "misbranded" under the law because of therapeutic claims made for them on or in the package.

**Convenience foods** continue to lead grocery-sales expansion, with a 39% increase in 1960, according to a Nielsen survey. This was almost 10 times the 4% increase for grocery-store sales as a [*Continued on page 42*]

# HOW THIS LITTLE PILL GOES TO MARKET



**3** **AVISCO CELLULOSE BAND** provides a visible seal of protection around bottle neck. Printed bands also can be used effectively to identify brand or product, merchandise contents of a bottle or jar.



**4** **AVISCO CELLOPHANE BUNDLE** provides immediate product identification, faster count for wholesalers and retailers. Saves money by ending need for printed and labeled paper wraps or boxes.

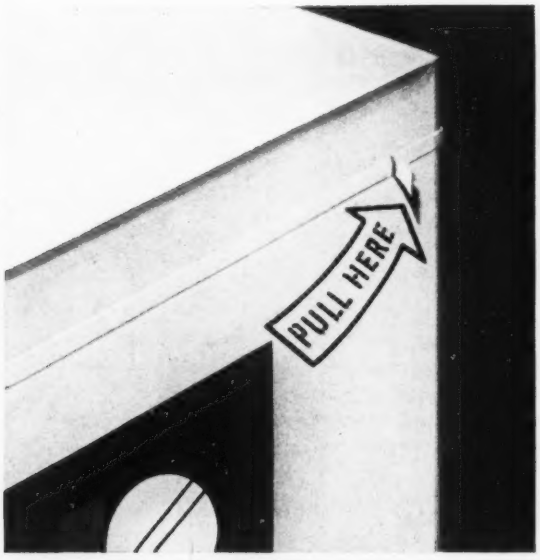
*These are just a few examples showing how Avisco fibers, films and plastics serve a wide variety of packaging needs. Tell us about your packaging requirements or problems. We'll be happy to help.*

**AVISCO®**

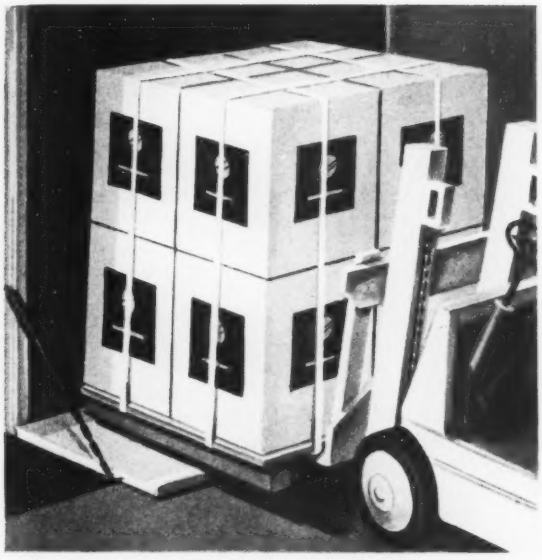
**AMERICAN VISCOSE CORPORATION,** PACKAGING DEVELOPMENT SERVICE

**1** **AVISCO RAYON STAPLE** is placed in the neck of the bottle to pack the pills tightly and protect them from breakage. Avisco rayon staple also offers packaging advantages of cleanliness and whiteness.

**2** **CAP OF AVISCO PLASTIC** tops the bottle. Avisco urea formaldehyde molding compounds in various colors are used in making durable closures for a wide variety of bottles and containers.




**5** **TEAR TAPE OF AVISCO RAYON** is used to simplify carton opening. It eliminates the use of sharp tools for the wholesaler and retailer, and products in the carton are less likely to be damaged.



**6** **AVISTRAP* CORD STRAPPING** is used to palletize cartons for shipment. Outperforms metal strapping—at lower costs—in many applications. Has no sharp edges, does not lash out if broken.

*Trademark American Viscose Corporation. Patents Pending.

# PACKAGING MATERIALS

AVISCO

1617 PENNSYLVANIA BOULEVARD, PHILADELPHIA 3, PENNSYLVANIA

*Continued from page 39*

whole. Nielsen categorizes convenience foods as "instants," "leisure-time foods" and "wife-savers," such as liquid cleansers. Also noted is a growing consumer trend to larger package sizes. Based on 13 brands with "large-package" introductions, the consumer vote was 23% of purchases in large sizes in 1956, 28% in 1958 and 31% in 1960.

**Another crackdown** is in prospect by state weights-and-measures officials, aimed particularly at pre-packaged meats and produce. Says Sealer W. A. Kerlin of California, "It is our opinion that the checking of pre-packaged commodities will soon dominate the field of weights-and-measures enforcement." Because of a flood of complaints of underweight, New York is now checking pre-packaging scales on a weekly basis.

**Food additives petitions** reveal some surprising side effects of the 1958 law affecting packaging. Among the latest petitions is one from the Harry Miller Corp., Philadelphia, concerning the use of a combination of edible tallow, oleic acid, mineral oil, potassium hydroxide and water as a lubricant for dies used in making cans for food packaging. The point is that any material touching a package during the course of its manufacture may be considered to have imparted an additive.

**Fluorescent printing** is aiming at another big market—beverage multi-packs. Neon-like fluorescent six-packs were displayed by Packaging Corp. of America at the recent Soft Drink Exposition. The effect of the glowing label is such in store display that it is very likely to sweep the beverage industry if one strong competitor adopts it—just as it is presently sweeping through detergent cartons.

**Food for thought:** "There is a trend today on the part of management to treat each packaging problem in a curiously ambivalent way, to ask for creativity and new thinking—yet insist on following the leader; to justify conformity by the size of the design fee, big research and even bigger committee meetings. . . . The consumer finds it hard to swallow product claims that are just like every other product claim, to distinguish between packaging with the same promise of every other package."—*Gerald Stahl.*

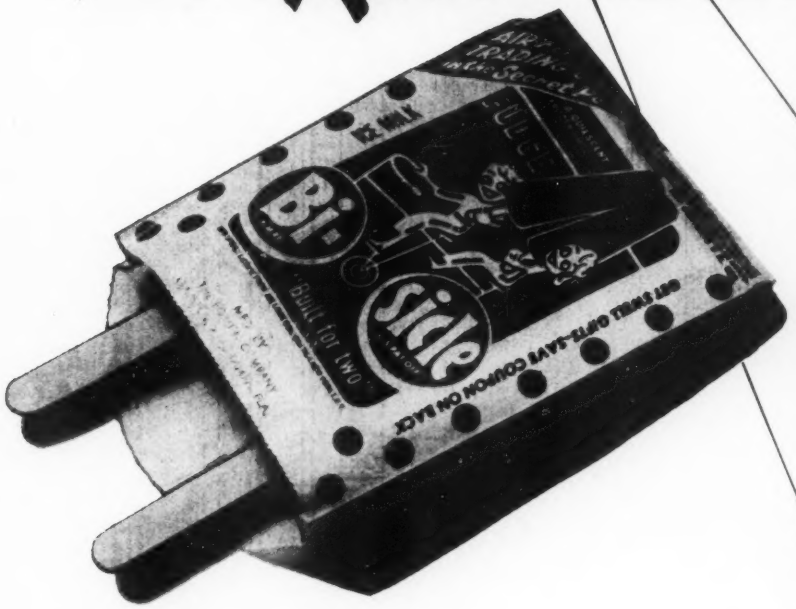
**Next target** for steel industry in its fight against aluminum in packaging markets is rumored to be a "tinplate foil," rolled so thin that it may underprice aluminum foil in certain areas such as semi-rigid foil pans, frozen-food dinner plates and perhaps in containers for frozen fruit-juice concentrates. Based on the thinnest steel ever rolled, this product, if successful, will represent another technological breakthrough for the industry.

**Things are happening** in the packaging of eggs. Wrapping standard egg cartons in heat-sealed cellophane (see *Background*, Sept. '60, p. 39) is a rapidly spreading practice, because the film lengthens the shelf life of the eggs as much as 700% by cutting down loss of moisture and carbon dioxide through the porous shell. A Texas store chain reports egg sales up 50% as a result. Now watch for an improved egg carton with greater protection and better stackability—the first basically new design in 40 years.

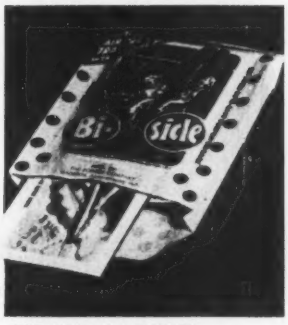
**New ruling** by the Federal Trade Commission makes it clear that corrugated and solid fibre boxes must comply fully with Rule 41 requirements if they are to carry the "certificate of boxmaker" relating to Rule 41 of the Uniform Freight Classification. One container manufacturer has been ordered to cease and desist from use of the certificate on non-complying boxes after FTC found that 10 out of 11 boxes in customer's hands did not meet Rule 41 requirements for burst strength or combined weight of facings.

# THE INSIDE* STORY OF AN OUTSTANDING SUCCESS . . .

## THANKS TO Kehr's CREATIVITY!



THE SECRET "PIGGY-POCKET"



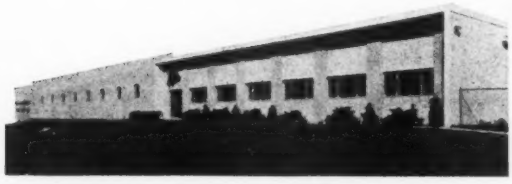

THE "PIGGY-POCKET" AND SECRET CARD EXPOSED

The "Bi-sicle" bag you see here contains both the delicious product and an inner pocket—sealed and secreting a "trading card"! This patented "Piggy-Pocket" is available for other industries and could just as easily contain a recipe or direction card, or any other sales-stimulating material, effectively hidden and sealed until the larger bag is opened!

This bag and its "Piggy-Pocket" has already won two Awards from the National Flexible Packaging Association in the Frozen Food and Paper Bag categories; but more important, it can win increasing sales for you for its interest-arousing utility and adaptability to wrapping or bagging—in any number of flexible packaging materials (patent protected, of course).

**CALL, WRITE OR WIRE US TO FIND OUT HOW WE CAN ADAPT OUR PATENTED "PIGGY-POCKET" TO INCREASE YOUR SALES!**

**America's Fastest Growing Flexible Packaging Manufacturer**



**Kehr PRODUCTS COMPANY**

**535 Davisville Road, Willow Grove, Pa.**
**Oldfield 9-6900**

*Designers and Manufacturers of:* Bags and Rolls from Flexible Films, Foils, Papers and Laminations printed by the Flexographic or Rotogravure Processes.

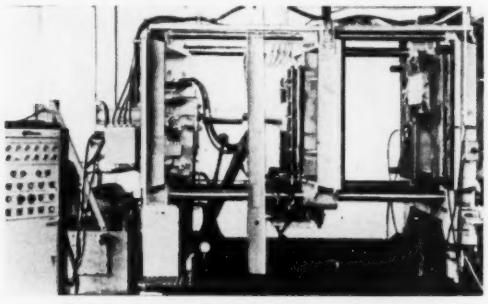
# EQUIPMENT & MATERIALS

### End-label heat-sealing coating

Marathon reports that its new end-label heat-sealing coating fills the need for a label that will stick to polyethylene bread wrappers and still do an effective job on other wrapping materials. The supplier's new heat-activated Marabond end label, now being released to the baking industry, will adhere to waxed bread wrappers, M and K type cellophanes and Pliofilm, as well as to polyethylene. It is said to be low in cost as well, and it reportedly can be run on conventional machinery without special attachments or pre-activators. The supplier also points out that its use eliminates mixed label inventory by bakers who are using several different types of bread wrapper. *Marathon, Div. American Can Co., Menasha, Wis.*

### Expandable-polystyrene molding press

A fully automatic expandable-polystyrene molding press that provides complete monitoring and control of every phase of the molding cycle—beginning with the bead and ending with the finished product—has been developed by Miller & Van Winkle. The supplier reports that its Millatron 1000 overcomes deficiencies of former molding equipment which had limited the potentials of molded expanded-



*Automatic molding press is controlled at extra-large panel (left). Bronze molds are mounted on adjustable bars in the large platen area (right).*

polystyrene products and containers. It is said to make possible for the first time fast, easy, economical, automatic and uniform manufacture of products from this material.

Other features reported for this new unit are: reduced production and product costs, minimum labor requirements, individual control of timing of cycle segments, and versatility (different products can be molded concurrently; colors can be varied as desired). The machine is designed for integration into an assembly line or a custom-molding operation. Bronze molds are mounted on a hydraulic press on special grids which permit molds of various sizes and shapes—up to 66 in. wide by 42 in. high by 15 in. deep. These grids are designed so that molds can be changed in 10 to 15 minutes.

To provide a rapid molding cycle (reportedly less than 1 min. for wall thicknesses of ½ in. and densities of 3 lbs.), molds are pre-heated by high steam pressure. To prevent collapse of the beads during the molding cycle, steam is fed to the female half of the mold at higher temperatures than to the male half in the welding operation. Two-stage pressure therefore is provided on the male half—higher for pre-heat and lower for welding. The complete molding cycle consists of: pre-heat, fill, final expansion and weld, pause for final fusing, cooling. A device called the Hydro-Gap cracks the molds open prior to loading, to assure positive fill. The air which feeds the material into the mold also is relieved by this device. Ejection of finished parts is by air blast or mechanical device, depending on design of the part being molded.

Timing cycle segments is regulated individually to permit variation of each function without affecting the entire cycle. This permits maximum control and facilitates resetting timing cycles for new products, says the supplier. Additional data on this new machine are offered by the manufacturer. *Miller & Van Winkle Co., Polystyrene Machinery Div., 155 Sherman St., Paterson, N.J.*

### Egg-carton overwrapper

New from Hayssen is an automatic egg-carton overwrapping machine that can accommodate waxed paper, cellophane and most heat-sealable films or foil combinations. Quick-change features permit change from one preprinted material to another, for easy and economical private-brand packaging, the supplier says. An electric eye for registration of preprinted material is said to assure accurate packaging. Other advantages reported for the machine are low labor requirements (one packer is required, to remove the wrapped carton and place it in the shipping case) and high speed that enables the unit to stay ahead of the user company's candling and grading lines. Among the merchandising benefits of overwrapped egg cartons as cited by the supplier are: longer product-storage life; protection against pilferage; easier handling, to prevent spillage and to end the leakage problem if any eggs are broken, and elimination of odor penetration. *Hayssen Mfg. Co., Sheboygan, Wis.*

### Oil-masking boxboard grade

Now available from Weyerhaeuser is a grade of boxboard designed to mask oils and stains that penetrate the outer surface of a package from within. Said to be low in cost, the boxboard employs aluminum pigment (supplied by Aluminum Co. of America) that provides a smooth exterior finish. In addition to its oil-masking property, the board is reported to be acceptable to printing and to possess outstanding bending quality. The metallic-coated material displays the same degree of scoring ease as conventional board, says the company. Suggested applications of the board are in low-cost gift packaging and in the packaging of oily products. *Weyerhaeuser Co., Boxboard & Folding Carton Div., 919 N. Michigan Ave., Chicago 11.*

### Carton forming and closing

Available under lease terms from Continental Can is the King Tuk, a machine for erecting and closing several styles of end-opening cartons in horizontal position. Reported to be low in cost, the unit forms cartons ranging in standard size from ½ by ½ by 3 in. to 12 by 4 by 12 in. According to the supplier, a hydraulic vari-drive provides the driving power and allows the operator to control the speed of the machine (up to 90 cartons per minute). The new machine, which also features simplified design, is available in several models (ranging in length from 5 to 10 ft.) that will erect the carton and close one end or pass it through a manual filling station and then close both ends of the carton by locking, gluing or both. Machine change-over from one carton size to another takes about 30 min., says the company. *Continental Can Co., Boxboard & Folding Carton Div., 530 Fifth Ave., New York 36.*

### Durable high-density polyethylene

A combination of improved durability with processability is one of the advantages reported by Goodrich-Gulf for its new Ameripol high-density polyethylene. According to the

# ANNOUNCING

*a new, transparent film to help cut packaging costs...*

# Visolyte

*Polystyrene film*

## by VISKING

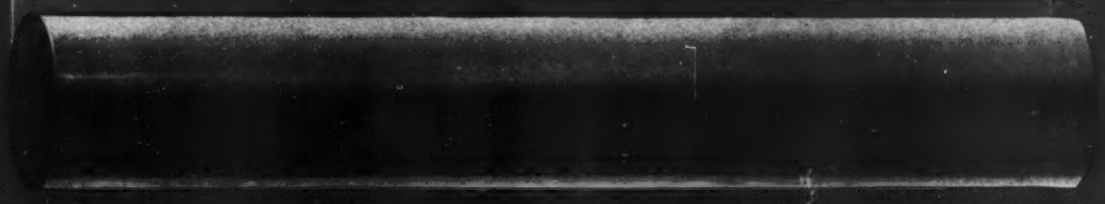
Economies are immediately evident, both on a price basis and on yield. Initially less costly than currently popular films; in addition, the yield per pound is 26,500 square inches compared with the 19,500 square inches normally obtained from cellophane, and the 23,000 square inches obtained from acetate.

Biaxially oriented VISOLYTE film has excellent dimensional and aging stability. It will not dry out under low humidity conditions—stores well—does not shrink or become brittle in storage. Its optical properties are unsurpassed for gloss and clarity of product display. No pre-treatment is required—printing on VISOLYTE film alone or on VISOLYTE film laminated to paper backing or high impact styrene is crisp and clear, producing brilliant, eye-catching wraps that help move merchandise.

VISOLYTE film is heat sealable or may be sealed to itself or to porous surfaces using economical, room temperature liquid adhesives. VISOLYTE film is available in 44" maximum width rolls. It can be used on most conventional equipment.

VISOLYTE film is highly recommended for: lamination; overwrap for candy, cards, games and puzzles; tomato tubes; use in window boxes and window envelopes.

*For complete technical information and samples, write today.*



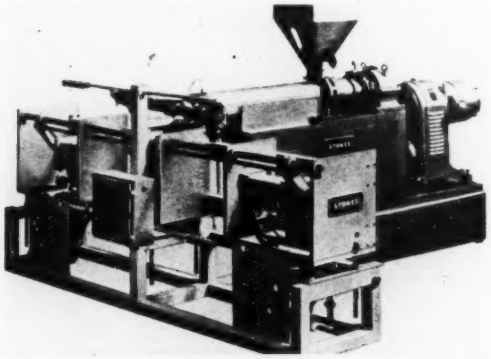
PLASTIC FILMS VISKING DIVISION OF UNION CARBIDE

UNION CARBIDE

supplier, the material is particularly suitable for blow-molded containers, extruded pipe and insulative products. The polyethylene is produced under a new process which is said to impart exceptional resistance to stress cracking and temperature embrittlement while maintaining the processing ease of conventional high-density polyethylene. Initially, the supplier will offer three grades of the polyethylene. *Goodrich-Gulf Chemicals, Inc., 1717 E. Ninth St., Cleveland.*

### Blow molder for large items

Stokes has developed a dual-manifold blow molding machine for the production of plastic items such as 5-gal. containers and other large pieces using a comparable weight of polyethylene, polystyrene or other plastics material. The Model 856 is designed to make efficient use of



the full output of a 3½-in. extruder, and provides 5 tons of clamping pressure at each of its two molding stations. Clamping is produced by a self-contained hydraulic system, or by air-actuation, if desired. Two large platens (20 in. wide by 27½ in. high) provide 550 sq. in. of mold area. The clamping cylinder's 13-in. maximum stroke provides 28 in. of daylight. According to the supplier, the machine's vertical-flow design offers flexibility in utilization and accessibility for easy mold alignment and maintenance. *F. J. Stokes Corp., 5500 Tabor Rd., Philadelphia 20.*

### Tamperproof, resealable vial

Kimble Glass introduces a tamperproof, resealable clear-plastic vial for liquids, powders or pills. Termed the Opti-seal Stopper Vial, it features a locked-on, one-piece closure which is manufactured by The Lumelite Corp. The polyethylene closure has a protruding, molded-in knob which the consumer snaps off with simple one-hand pressure. This knob, which cannot be removed without indicating that the closure seal has been broken, then becomes a plug fitment for resealing of the closure. In addition to the tamperproof closure, says the supplier, the container also offers the advantages of optical clarity, stability, light weight, uniform fill points and ease of labeling. *Kimble Glass Co., sub. Owens-Illinois Glass Co., Toledo 1.*

### Polymer-coated cellophanes

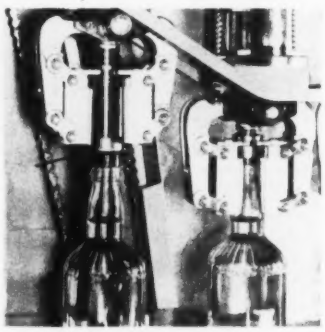
Olin Mathieson adds two new polymer-coated cellophane films to its line. Designated V-401 and V-402, they are reported to offer exceptional durability and product protection to extend the shelf life of foods and non-foods. The moistureproof films also are said to give firm, strong seals at lower temperatures or higher speeds, for faster packaging. Available in 300 and 450 gauge (the latter only for V-402), the films are suggested for packaging cookies, candies, cakes, nuts and foods with high shortening content, as well as textiles and paper products. They are recommended for moist products distributed in dry climates and dry products sold in humid climates. Additional information may be obtained from *Olin Mathieson Chemical Corp., Packaging Div., Film, 655 Madison Ave., New York 21.*

### Automatic filler for aerosol lines

National Instrument's Filamatic Model DRB-16 is a volumetric product filler for pressure or cold-filling on aerosol lines. Filling speeds of up to 40 containers (16-oz. content) per minute can be achieved, says the supplier. Installation of the filler is done by attaching a microswitch actuator to the conveyor. Fill is initiated automatically each time the aerosol container depresses a microswitch. The new unit also can be used for volumetric filling of non-pressurized plastic, metal or glass containers up to 32-oz. capacity. Filling accuracy is within 1%, the company says. *National Instrument Co., 2703 Rockwood Ave., Baltimore 15.*

### Excise-stamp applicator

Developed primarily for the application of Government tax stamps across the tops of liquor bottles is Phin Sales' new excise-stamp labeling machine. Claimed to be low in cost, flexible and easy to operate, the machine is supplied in two basic models. The standard model reportedly will apply stamps at speeds of 20 to 130 bottles per minute; the high-speed model is claimed to operate at 80 to 200 bottles per minute. There is virtually no limitation on the size or shape of containers that can be handled, says the company. In operation, stamps (fed from a magazine) are first covered with adhesive. Accurately registered on the bottle, each stamp then is applied by continuously traveling pressure pads that are molded to the contours of the bottle cap and neck. Compression is maintained on the stamp for 2½ cycles to insure adhesion. Additional data on this machine are available from the manufacturer. *Phin Sales Co., 26 Lipton Ave., Toronto 6, Canada.*



### Linerless polyethylene screw cap

Aurora Plastics Corp., Closure Div., is offering packagers a new linerless screw cap fabricated of polyethylene. The plastic closure is reported to provide an efficient seal by means of tapered side walls and an integral internal ring which is molded in. Named by Aurora to act as sales agency for this polyethylene screw cap is *Industrial Seal & Closure Corp., 44 Cherry Valley Rd., West Hempstead, N.Y.*

### Automatic carton closer

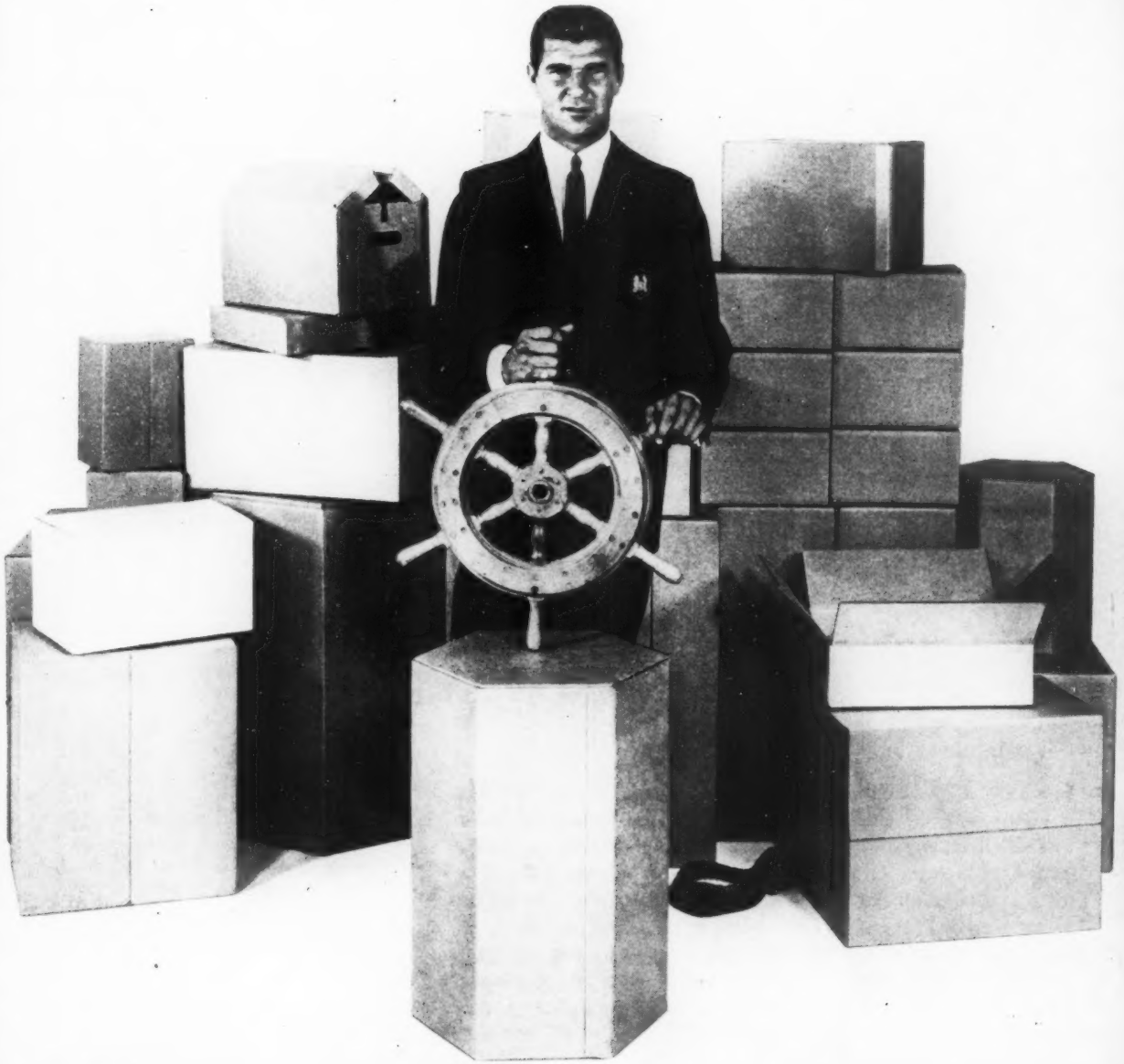
Now available to packagers in the United States is Package Forming Machinery's Pac-Form automatic-carton closing machine. Utilizing a patented pre-heat principle in con-

[Continued on page 142]

# GAYLORD SAILS IN SEARCH OF PACKAGING DISCOVERIES

Gaylord's full crew of research specialists constantly seeks new packaging worlds. We explore every possibility, to assure you of a tight packaging ship with all costs battened down.

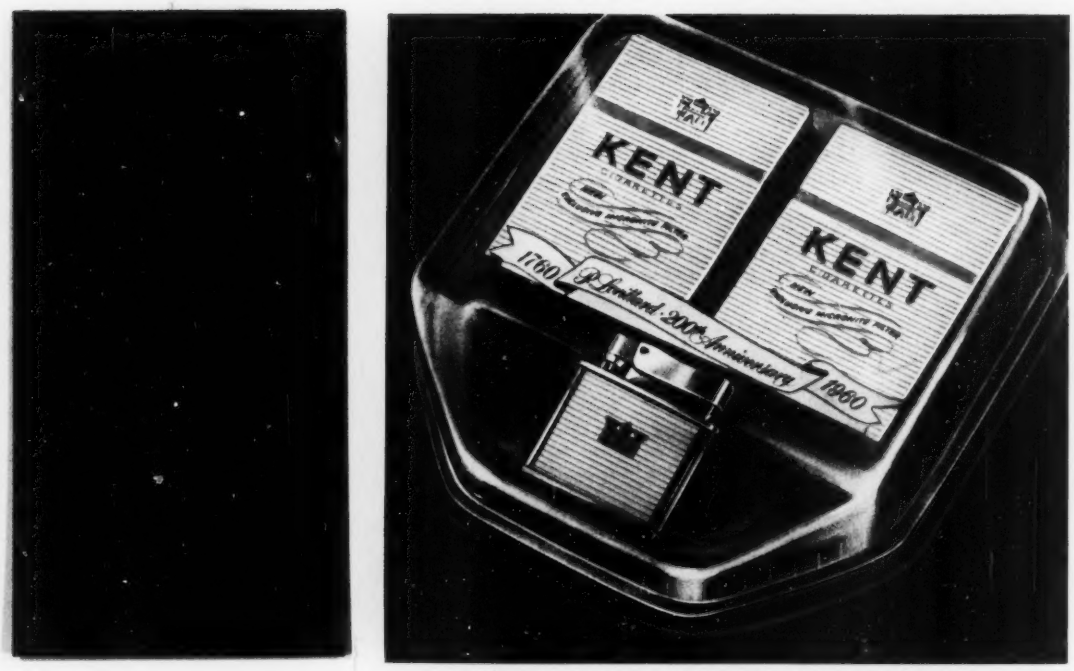
Want that kind of watch-stander looking out for you? Then invite your nearby Gaylord Man aboard today.



**CROWN ZELLERBACH CORPORATION**
**GAYLORD CONTAINER DIVISION**

IN CANADA · CROWN ZELLERBACH CANADA, LTD. VANCOUVER, B. C.

HEADQUARTERS, ST. LOUIS
PLANTS COAST TO COAST




**Stylour flocked plastic tray produced for P. Lorillard Co. by Plaxall, Inc., Long Island City, N. Y.**

# "Luxury-look" packaging... yours at low cost... with Stylour*

*(...the fabulous flocked plastic by Nashua)*

Luxury-look packaging? It's yours at *low cost* with Stylour flocked plastic by Nashua!

This high-impact, low-temperature polystyrene — richly coated with cotton or rayon flock — puts glamorous packaging within reach of almost any budget. And it is adaptable to almost any package. You can vacuum-form it... pressure-form it... bend it... die-cut it. (Wonderful for protective packaging, too!)

Stylour flocked plastic is available in a variety of gauges and colors, and in rolls or sheets. Write for samples and full information. Nashua Corporation, Dept MP-11, 44 Franklin Street, Nashua, New Hampshire.

*Reg. U.S. Pat. Off.

NASHUA Corporation

# Good Package Design* Stimulates Sales!

Amazing things can happen at the point of sale when your designers work with IMCO polyethylene containers. Freed from the restriction of conventional materials, they continually develop packages which overwhelm competition by the sheer magic of unusual form and color.

Thanks to advances in polyethylene chemistry, this new world of design is now available to nearly all packagers. IMCO containers are impermeable enough to hold most perfumed cosmetics, creams and household products. IMCO costs are directly competitive with glass and tin.

Surely this is the time to give your product the advantages of IMCO's knowledge and experience in the production of polyethylene containers. We can assist you in running tests of your products in IMCO containers, and we will be happy to quote prices on stock or custom-made bottles and jars. Call the sales office or plant nearest you or write direct to our Sales Manager in Kansas City. We'll have a man contact you within twenty-four hours.

*CLEAN AS A WHISTLE, PJG IN A POKE AND BOXING GLOVES BY AVON PRODUCTS, INC.

IMCO

CONTAINER COMPANY

A Division of Rexall Drug and Chemical Company
75th and Cleveland
Kansas City, Missouri

**Sales Offices**
New York, N. Y.
Kansas City, Mo.
Chicago, Ill.
Los Angeles, Calif.
Cooksville, Ont., Can.

**Mfg. Plants**
Belvidere, N. J.
Cooksville, Ont., Can.
Kansas City, Mo.
Excelsior Springs, Mo.
Harrisonburg, Va.
Goleta, Calif.

IMCO **SELLS** THE BEST

**FEARLESS FULLER:** Just wrapped up a very sticky case, Miss Watson.

**MISS WATSON:** Tell me all the devious details, Fearless.

**FEARLESS FULLER:** Well, I call it "The case of the eremophile's foil."

**MISS WATSON:** I know what foil is. But what's an eremophile? Some new type of foreign car?

**FEARLESS FULLER:** No. An eremophile is a person who loves solitude.

**MISS WATSON:** You mean like, *I vant to be alone.*

**FEARLESS FULLER:** Exactly. Only in this case, they wouldn't let this eremophile, a packaging engineer, alone.

**MISS WATSON:** Who're they?

**FEARLESS FULLER:** The people in his firm. Seems they couldn't get his newly-designed foil labels to adhere properly to the boxes, bags, cans, and bottles on their packaging line.

**MISS WATSON:** The situation sounds positively desperate!

**FEARLESS FULLER:** It was. That is, until I reminded them that Fuller makes a specific foil glue for each type of container.

**MISS WATSON:** You mean what's good for bottles may not be good for cans?

**FEARLESS FULLER:** Correct, Miss W. It don't mean a thing if it ain't got that cling. Fortunately, I was able to recommend some perfect Fuller adhesive solutions to his problems. Now everything's fine.

**MISS WATSON:** Is he alone again now?

**FEARLESS FULLER:** Not quite. His relatives heard how successful he was and all rushed to visit him.

**MISS WATSON:** Oh Fearless, you're really kooky!

**FEARLESS FULLER:** Perhaps, Miss Watson. But you'll have to admit there are very few adhesive problems a Fuller man can't solve.

*Your Fuller man is ready with the correct solutions on any adhesive problems for you, too. Contact your nearby plant.*

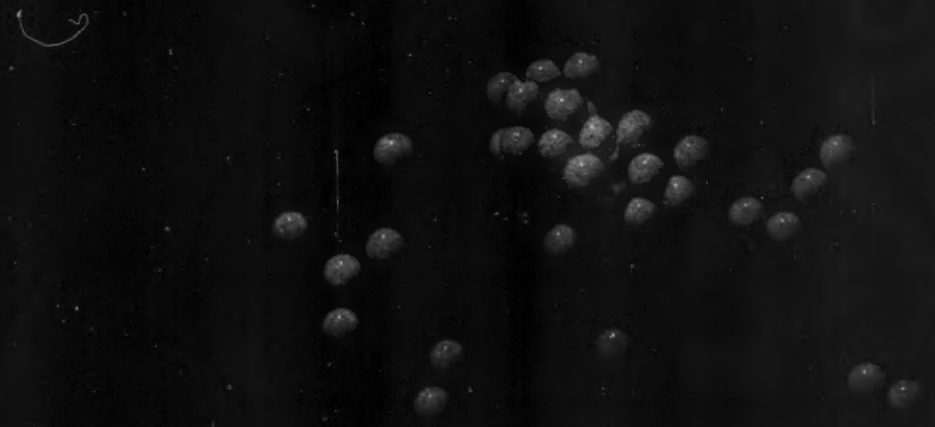
# H. B. Fuller Co.

INDUSTRIAL ADHESIVES

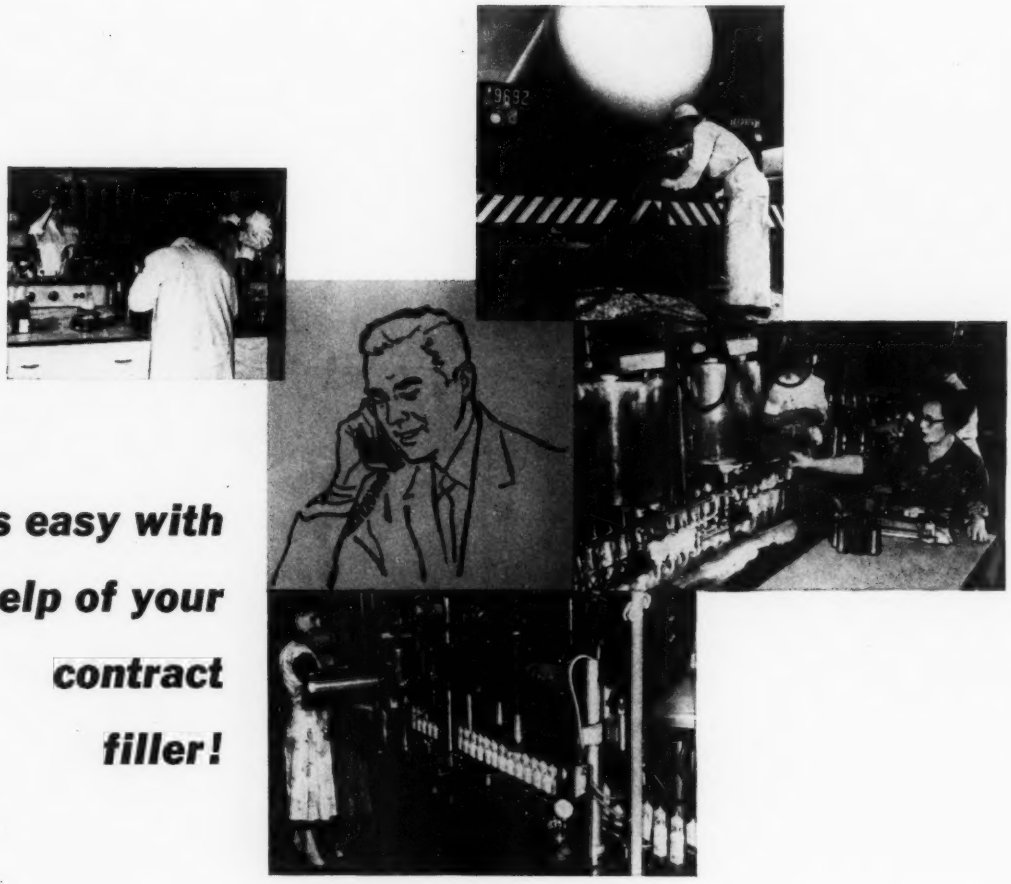
St. Paul, Minnesota

St. Paul, Minn. • Atlanta, Ga. • Buffalo, N.Y. • Chicago, Ill. • Cincinnati, Ohio
Dallas, Tex. • Kansas City, Mo. • Linden, N.J. • Los Angeles, Calif. • Memphis,
Tenn. • Portland, Ore. • So. San Francisco, Calif. • Tampa, Fla.
Also Winnipeg, Can. • Fuller Adhesives International, Nassau, Bahamas

# „Built by Hamac-Hansella"



# Take a giant step into aerosol packaging



***...it's easy with the help of your contract filler!***

Near you there's an aerosol specialist . . . a contract filler who will take your aerosol from product idea to marketplace. He has an investment in specialized equipment that would cost you tens of thousands of dollars to duplicate and a comprehensive knowledge of aerosol formulation and packaging. He will be glad to put this knowledge and equipment to work for you. The contract filler can get you started in aerosol packaging without your having to invest a penny in plant, production equipment or specialized personnel!

General Chemical will be glad to put you in touch with capable contract fillers in your area. In addition, as the producer of "Genetron" aerosol propellants, General can provide valuable marketing information and a wealth of technical data. For full details, just write the General Chemical office nearest you.

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**GENERAL CHEMICAL DIVISION**
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# FAST SETTING QUICK DRYING

# CARTON INKS

## FOR LETTERPRESS AND OFFSET

The quick set, fast dry and high gloss of IPI's revolutionary Speed King inks for general commercial use are now available to package printers!

Speed King Carton inks set so fast—even on patent coated boards—that offset rarely is a problem. This means higher press loads without racking, less handling, and considerably less spray than needed for conventional gloss carton inks.

Speed King's gloss on clay coated and on cast coated stocks such as LUSTERKOTE, KROMEKOTE, ULTRA-GLOSS, etc., rivals that of the finest gloss carton ink. And because it's a more *uniform* gloss, even lower cost stocks print better!

Speed King's split-second set and amazing dry (as little as 2 hours) mean faster processing of the printed board—with obvious advantages to the carton printer.

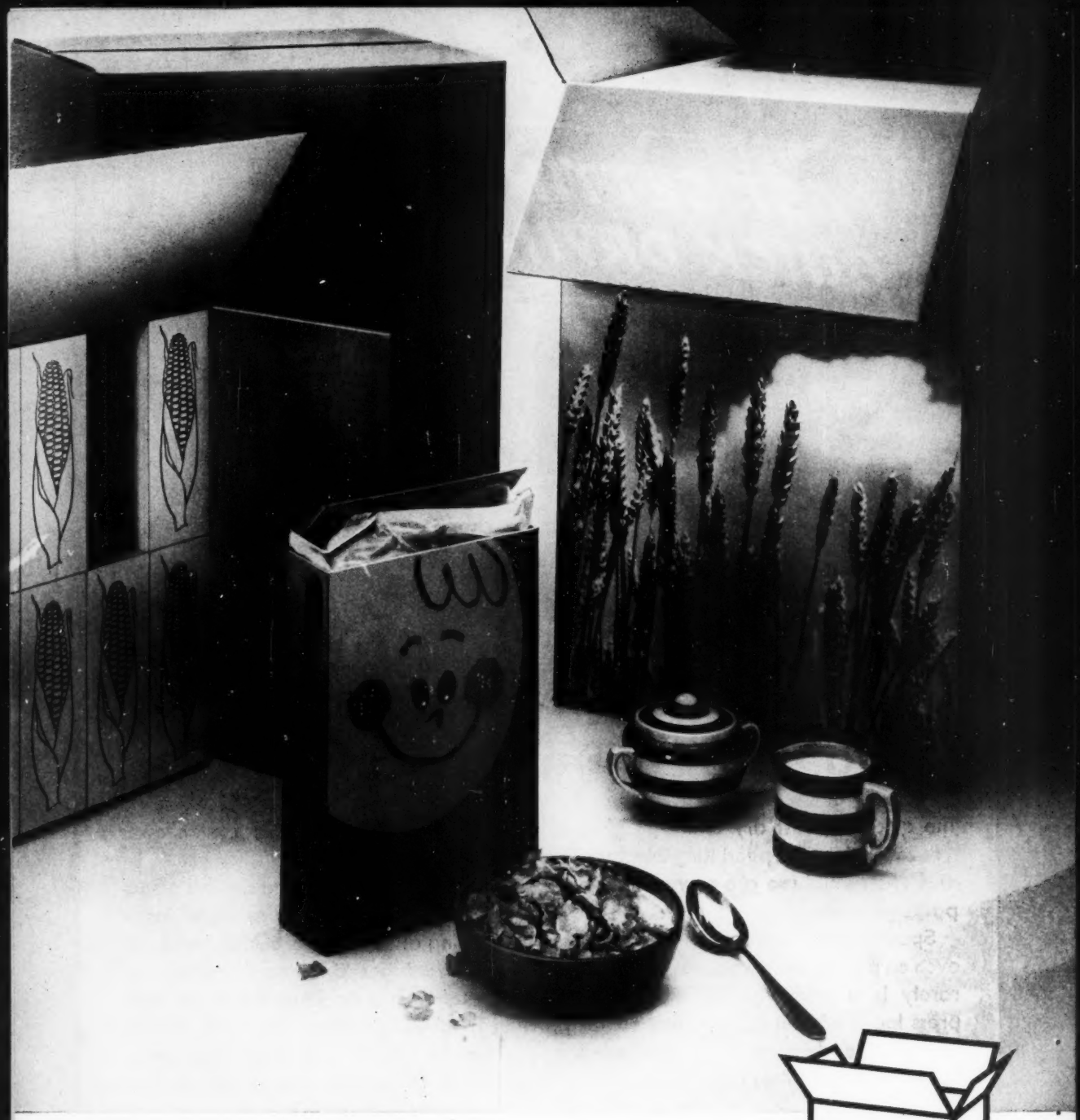
Speed King is stable on the press; halftones don't muddy up, small type stays open.

These wonderful new inks—both letterpress and offset—are now available from your nearest IPI branch, in a wide range of popular carton colors.

Try them on a really tough job—and see the definite difference!

*IPI, IC and Speed King are trademarks of Interchemical Corporation*

INTERCHEMICAL CORPORATION
INK DIVISION
EXECUTIVE OFFICES: 67 WEST 44th STREET, NEW YORK 36, N. Y.



# Millions of breakfasts in corrugated

America's big morning appetite is a bull market for breakfast food. Producers supply this demand with a harvest of crispness, a multitude of different cereal brands. Why are so many of these family favorites shipped in boxes by Hinde & Dauch Division? Because buyers know they can depend on Hinde & Dauch for money-saving *corrugated containers in volume.*

**West Virginia Pulp and Paper**

**Hinde & Dauch Division**

17 Plants • 42 Sales Offices • Sandusky, Ohio

# Sounding BOARD

WE ASK THE READERS

## How do you safeguard new-product secrets with your packaging suppliers?

**Robert Anderson**
Director, Art & Packaging
Paper Mate Co.
Chicago

As in any highly competitive business, we consider information on new-product plans top secret.

Our Package Design group is not involved in product design so, as a general rule, new-product details are final before we are given a packaging assignment. This means, in all probability, tooling has been completed and we are only a few months from actual production. The company at this point is willing to assume the risk inherent in working with persons outside the company.

Our security measures are twofold. First, we maintain tight security in the Package Design Department. New developments are handled and stored in a locked area within the department. This area is off-limits to all except those directly concerned with the project. Persons from outside the company are interviewed in the department's conference room, where there is no possibility of a chance view of a new design.

Second, we have a practice of doing business only with vendors who are not working with another writing-instrument firm. We've found this practice is mutually beneficial to us and our vendors.

An interesting sidelight on the question of security arose when I asked a typesetter to observe tight security on a piece of copy. His reply was to the effect that if he told his men that it was secret we would be guaranteed that it would be all over town in 24 hours. We allowed the copy to go through normal channels and our secrets were safe. The indication is that judgment must be exercised to supplement hard and fast procedures.

In the final analysis, the best assurance of security is to develop the feeling among employees and suppliers that they have a stake in the company's success.

**Robert N. Johnson,** *Chief Chemist, The Kroger Co., Cincinnati:* We rely heavily upon packaging-material suppliers for new product and packaging ideas; therefore, with certain exceptions, there is no marked effort made to limit their knowledge of our operation. It is assumed, of course, that the suppliers are ethical and this, for the most part, has been an adequate security measure for the type of secrets which we have.

Packaging secrets are short lived in our business. Obviously, as soon as the product appears on the market competitors know all about it.

As an illustration of the value of good packaging-material supplier relations—a supplier brought to our attention his development of an improved closure long before it appeared on the market and substantially before it was known by most of our competitors. In this case also, production capacity for the closure was limited for a period of time. This gave our product several months on store shelves with the improved closure before it became available generally.

**Hal Temkin**
Advertising & Sales Promotion Manager
Sleex Products Co. Div., Formfit Co.
Chicago

The answer to this important question can really be summed up in one word—trust—but, of course, that isn't the entire answer. There is no sure-fire method of safeguarding new-product secrets completely because of the variety and number of people who work on a package from its inception—designers, artists, typographers, keyline artists, photo-engravers, printers, etc. How is it possible to know when someone in any of these shops might find some item of interest to pass along to a friend or relative in an allied business?

I think it is important to work with packaging suppliers you know and can trust. If your new product is top, top secret perhaps it is best to work with suppliers you have worked with before. Most reputable and well-known packaging suppliers, however, will respect your confidence and I think it is well to lay the facts right on the line: "This product is top secret and we would appreciate it if you would take every possible precaution to keep it that way!"

"Visitors" to a supplier's shop or plant present a special problem in maintaining new-product security. Printing salesmen, just as one example, regularly show customers and prospects through their operation where near-completed or finished (*Continued on page 170*)

# QUALITY CONTROLLED LAMINATIONS

## For Tough Packaging

*With Excellent Machineability*

**1** . . . MEATS
300 K202 / 2 Mill Poly
Pouch

**2** . . . HARDWARE
300 Cellophane / 1 Mill Poly
Roto-Wrap

**3** . . . CHEMICALS
25 lb. Glassine / 1 Mill Poly
Wrap-Ade

**4** . . . SAUCES
300 Cellophane / 1½ Mill Poly
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**Modern Packaging** offers top quality and service in developing new ways for you to insure, protect and display **your product**. With Modern Packaging's carefully controlled techniques your product is **visible**; yet protected by a tough, durable, easily handled, transparent film **designed to sell your product**.

Shelf life is increased, customer acceptance goes up and spoilage costs go down.

Take advantage of Modern Packaging's experience, technical achievement and advanced quality control facilities. **Write today** for Modern Packaging's interesting and informative literature. It's designed to help select the process that's best for you!

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CONVERTERS AND FABRICATORS OF FLEXIBLE PACKAGING MATERIALS

**MOUNT HOLLY/NEW JERSEY**
*Chicago Representative:* **Rollprint Products Corp.**

# YOU CAN TEST*

# UVINUL®

## ULTRAVIOLET LIGHT ABSORBERS

UVINUL is Antara's name for chemicals that protect against ultraviolet (UV) radiations; they function by absorbing these rays and dissipating this energy harmlessly. The UVINUL products are the most light-stable UV absorbers developed to date. They offer the widest range of application of any group of UV absorbers commercially available in the world.

Some examples of UV degradation are: loss of tack in adhesives, darkening of wood, fading, loss of dimensional stability, rancidity, and sunburn. The UV component in light (daylight or fluorescent) affects clear and pastel plastics too, causing discoloration, surface crazing, brittleness, and loss of tensile strength. If *your* product deteriorates in the presence of light, the cause may be UV radiations – and it's more than likely that the problem can be solved with a UVINUL absorber.

UVINUL products can be incorporated into UV-sensitive material directly – or can work in a protective shield, wrap, or coating. The table below suggests areas of use. Our chemists can help you apply the UVINUL absorbers effectively – and meanwhile, you can easily test their protective power by using clear cellulose acetate sheets containing UVINUL D-49. Just fill out the coupon and mail it to Antara for your free supply and directions for use.

**SUGGESTED AREAS OF USE FOR UVINUL UV ABSORBERS**

| UV-SENSITIVE MATERIAL | UVINUL 400 | 490 | D-49 | D-50 | DS-49 | M-40 | N-35 |
|---|---|---|---|---|---|---|---|
| Acrylics | XX | XX | XX | | | | |
| Epoxy Resins | XX | | X | | | | X |
| Cellulose Acetate | X | | XX | | | | |
| Latex | | | | | XX | | XX |
| Nitrocellulose | X | X | | | | X | XX |
| Paints, Oil-Base | | XX | XX | XX | | X | |
| Paints, Water-Base | X | X | X | XX | XX | | |
| Polyester Resins | XX | | | X | | | X |
| Polyolefin Resins† | | | | | | | |
| Polystyrene | XX | | | | | XX | |
| Polyvinyl Chloride (PVC) | X | | XX | | | X | |
| Rubber | XX | | | | | XX | |
| Urea-Formaldehyde Resins | | | | | | | XX |
| Urethanes | | XX | X | XX | | | |
| Varnish | XX | XX | X | X | | X | |

LEGEND: X=compatible and effective. XX=compatible and effective to a superior degree.
†Samples of chemicals still under development are available for trial in these products.

*(AND USE)

*From Research to Reality*

ANTARA gaf

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Please send me free test sheets containing UVINUL D-49 along with directions for use (TA-33).

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Another leading product that now uses

# Riegel FOLDCOTE

**Full-bleached sulphate board on-machine coated, one side**

For noticeably brighter, cleaner packages ... and extra eye-appeal ... try Riegel's outstanding new carton stock ... Foldcote.™ Superwhite for color brilliance, super-smooth for high-fidelity reproduction ... super-strong for a rugged, rigid package. Ask for samples and full information. Ask too, about other solid bleached boards tailormade to your needs. Write to Riegel Paper Corporation, 260 Madison Ave., New York 16, N.Y. Export inquiries invited.

Brown & Williamson uses Riegel Foldcote for its Viceroy 2200 carton, printed 3-color gravure by Diamond National Corporation.

# WORLD REPORT

*Abstracts from foreign packaging magazines*

## SWEDEN

### *Cold-seal coatings for higher speeds*

A new cohesive cold-seal material that does away with the dwell period associated with heat-sealing reportedly stretches to the limit the present speed of wrapping, bag-making and pouch-making machines, according to *Packaging News* (England). The material, called "Cosil," developed by a chemical engineer with a Swedish paper maker and converting firm, is comprised of unplasticized plastics dispersions, but the published information does not identify the plastics. The material is being used to coat both hard- and soft-sized papers of various types and weights, also foil laminates. The coated surfaces stick only to each other and then only when a predetermined pressure is applied. This may be light or heavy. The lightest tack formulation apparently achieves cohesion by finger pressure and is already being used to enclose medicated bandages between two webs of coated paper. This package can be opened and reclosed by hand, an easy-open feature being provided by folding back the edges of the webs so that an area opening is left untreated in the coating operation.

The new coatings, it is stated, may be made impermeable to gas, water vapor and aromas. They may also incorporate a corrosion inhibitor without affecting their cold-sealing charactertistics. Some formulations are intended for steam sterilization at 140 deg. C. First large-scale use in Sweden is for Lyril soap. Production on a slightly modified machine is 180 packages per minute. Other applications in Sweden are for packaging ice cream, plated hardware, hypodermic syringes and needles. The coatings are suitable for contact with foods, reportedly having been approved by the U.S. Food & Drug Administration.*

## BELGIUM

### *Thermoformed PVC containers for coffee*

An Antwerp coffee packager has replaced bag packaging with thermoformed containers of unplasticised polyvinyl chloride film, according to *Tara* (Switzerland). For the containers, the material is used in 0.5-mm. gauge, while the lid is formed of 0.2-mm. material. Dimensions of the rectangular container are 112 by 72 by 52 mm. Production is at the rate of 1,500 packages (two at each cycle) per hour. Lids are printed with an attractive design.*

## AUSTRALIA

### *PVC film by blow extrusion*

The process of producing unplasticized polyvinyl chloride film by the blow extrusion method on a commercial basis by an Australian firm is heralded as a major Australian achievement in plastics technology by *Australian Packaging*. In this all-Australian operation, the article states, technologists pioneered the development of new PVC formulations and designed special extrusion equipment. And the polymer, which was previously imported, is now also manufactured by the Australian firm.*

## ITALY

### *Automatic toothbrush packaging machine*

A special-purpose machine has been developed by an Italian firm in Bologna for packing toothbrushes into plastics containers at a rate of 50 to 60 items per minute. The machine, described in *Packaging* (England), is designed for hand feed with a lugged conveyor belt for reception of the toothbrushes, which are deposited crosswise into intersections between the lugs. From this point on, the operation is fully automatic. The containers consist of shallow trays of transparent material. Each time the lower one is taken from a stack into the machine, a gripper picks up a toothbrush and drops it into the container. At the next station, the lid is put on and is secured by a label which assures a tamperproof package.*

## GERMANY

### *Packaging stockings at 55 per minute*

Film pouches are formed and sealed around stockings in board folders at speeds up to 55 packages per minute on a new machine made in Germany, described in *Packaging News* (England). An expert packer can produce only four packages a minute when filling ready-made bags by hand, according to the German firm, but one operator can supply the magazines of two machines to produce filled and sealed pouches at about 100 per minute. This, of course, does not allow for the time taken in assembling the inner packages; this job is still done by hand. The stockings are wrapped around a rectangular card and then placed in a stout paper folder. Transparent wrapping material is supplied from two reels and the stocking folders are drawn from a magazine automatically and placed between the webs before they reach the sealing station. At the sealing station, a rectangular die seals the two webs of film on all four sides of the board folder and trims away the waste film to within 3 mm. of the seal, to produce a neatly finished pouch. With attachments, this equipment may be used to package many other items that have a similar shape or may be enclosed in a similar type of folder.*

### *Silk-screen printer for plastic bottles*

A machine of German origin reportedly can print up to 4,000 plastic bottles per hour by the silk-screen process. Automatic feeding is by a conveyor belt, according to description in *European Packaging Digest* of the French Packaging Institute. Printing in several colors may be obtained by adjustment of the multiple printing units. Spotting is taken care of by a photo-electric cell.*

### *Carrier for fresh flowers*

A polyethylene bag with carrying handle at the top, shaped and sealed at the bottom to hold stems of flowers in water until the shopper gets home, has been developed in Germany. There is an opening in the side to allow water to be poured into the sealed bag. As reported in *Packaging News* (England), the bags are designed for selling fresh flowers from automatic vending machines, which heretofore required the customer to wrap the bunch after lifting it from a water container secured within a cupboard-type machine.*

### *Changing shopping habits*

That German consumers are making the most of their growing prosperity and modernized mode of living is evident in the innovations, many of American origin, that now dot the pattern of retailing in the Federal Republic, says *German American Trade News*. For instance, 60% of the

*For additional information, write: World Report Editor, MODERN PACKAGING, 575 Madison Ave., New York 22.

weekly sales in self-service food stores are now made on Friday and Saturday, possibly as the use of refrigerators becomes the rule rather than the exception. With work hours reduced, families now have Saturdays free. Weekend shopping is also dictated by the fact that in many families wives have jobs too. Frozen foods are just beginning to find acceptance, 10% of all German housewives reportedly buying frozen foods regularly. But, half buy only occasionally and 39% have not yet sampled them.*

### *Multipacks for condensed-milk cans*

A solution for merchandising three cans of condensed milk as a unit in Germany is described in *Die Neue Verpackung* (Germany). Three cans are simply stacked on top of each other before being fed to the labeling machines. Three labels are printed on one sheet, with perforations between them. This gang label envelopes the three cans like a sleeve. The perforated labels are reported to be strong enough to keep the cans together until they reach the customer's shopping bag and may be broken apart by turning the cans slightly to break the perforations. It is recognized that there are cellulose film overwraps and carry cartons, the article states, but these involve extra cost, whereas the perforated gang label involves little added expense.*

### *Pressure-sensitive, metalized acetate labels*

A German firm specializing in pressure-sensitive and heat-sensitive labels offers continuous-roll labels of vacuum-metalized cellulose acetate film which cannot be removed after application. As described in *Die Neue Verpackung* (Germany), they are delivered with a wax- or silicone-laminated paper backing and are suitable for mechanical application.*

## FRANCE

### *Preserved food in plastic bags*

Preserves in plastic have become a reality in France, it is stated in the *European Packaging Digest* of the French Packaging Institute. The package consists of a bag made of polyamid film, which resists sterilization temperatures. Food is introduced into the bag under vacuum. The pouch is sealed and sterilized. Tightness to microbic infiltration is provided by the characteristics of the polyamid film, it is reported. The French Appert Institute, specializing in research in the canning field, has conducted a number of tests which reportedly have shown "perfect conservation for at least six months of asparagus, mushrooms, green beans, peas and spinach."*

### *'Emballages' machinery edition*

For the first time, packaging machinery was grouped as a special section of the 14th Salon International de L'Emballage and baptized "Autopac." For the convenience of readers, a special number of the French packaging publication, "Emballages"—called "Numero 191 'Autopac' "—was published, covering in detail, with illustrations, outstanding machinery developments seen at this event. This number was coupled with a second number for Nov.-Dec., 1960 —"Numero 192 'Publipac' "—covering the design, marketing, sales and merchandising aspects of packaging at the 14th Salon International.*

## ENGLAND

### *Flip tops for chocolate*

The Nestlé Co. has adopted the flip-top cigarette carton for foil-wrapped blocks of its milk chocolate called Royals for sale in English markets. According to *Packaging News* (England), the boxes are made on the same machines that produce the hard-pack cigarette packages. A giant replica of the box is being used as a floor-stand display to merchandise the pack at the point of sale.*

### *Low-cost, lightweight mailer*

A spirally wound paper container with a beaded-in oval base has been introduced in England as an economical postal package for mailing samples of products packaged in small polyethylene bottles. According to *Packaging News* (England), the container is creased at the neck to form a part closure, but is supplied slightly open at the top to allow for quick insertion of the bottled product. The neck is punched to take a metal clip which closes the container and holds an address tag. For products that need added protection, the mailers may be made with wound-in barrier materials. The containers are supplied in colors and may be printed with trade identification if desired.*

### *Rotary feeder for use with plastic netting*

To eliminate manual handling and to speed up produce packaging with polyethylene netting, a new rotary feeder has been developed by the English firm which makes a severing and heat-sealing unit for this material. The new equipment, described in *Produce Packaging* (England), consists of two turntables mounted one above the other on the same motor-driven shaft. Produce such as fruit, potatoes, brussels sprouts (or miscellaneous goods, such as tennis balls, small plastic or metal fittings) are emptied on to loading trays at the back of the feeder and the trays can be elevated to feed the turntables. As the turntables rotate, articles come into the path of air jets produced by a compressor unit mounted at the side. The jets blow the components down the feed tubes, which can be arranged to deliver them whenever required. Prior to introduction of the rotary feeder, the flow of components through the feed tubes had to be maintained by manual labor, which limited output to 15 packs per minute. With the mechanically operated rotary feeder, 25 a minute are completed.*

### *Batteries work portable measuring unit*

A new unit for measuring all types of coatings on metal products is battery operated and therefore portable anywhere in the plant or outside. It operates on the principle that electrical characteristics of a coil are influenced in proportion to its proximity to metal surface, according to a description in *Packaging Review* (England). In suitable conditions, a meter is capable of translating these changes in the coil into measurement of a non-metallic coating on metal, such as thickness of lacquer on a steel drum or the thickness of paper, board or film being passed over a steel surface. This coil is also influenced by the type and structure of the metal. Since the instrument is capable of measuring moving sheeting as well as stationery articles, it can be applied to a production run to give continuous readings of thickness, hardness or other changes that can be revealed by the electrical characteristics of the particular material that is being produced.*

### *Foil embossing by radio frequency*

The difficulties encountered when using ordinary hot-press stamping machines for embossing gold and colored foil on PVC sheeting have been eliminated by using radio-frequency welding techniques in conjunction with a pneumatically operated foil-feed mechanism, according to the report of a development of an English firm as described in *Packaging Review* (England). The machine consists of a standard type of plastics welder and the embossing attachment. Foil is conveyed from a take-off reel and passed below an embossing electrode fitted to the press head of the welder. The surplus foil is taken up by a roller system which also acts as the traversing mechanism for the foil.*

*For additional information, write: World Report Editor, MODERN PACKAGING, 575 Madison Ave., New York 22.

# Good Show!

Striking Ekco Alcoa aluminum packages have a high performance I.Q. They carry products unscathed throughout the production, distribution, and customer-use stages of marketing. Food can be frozen, heated, and served in one attractive container. Hermetically sealed, Ekco Alcoa containers keep moisture sensitive products such as pharmaceuticals or ball bearings with complete safety. These versatile performers nest compactly, take up little space in a plant or warehouse. Their precise uniformity makes them ideal for high speed production lines, and they weigh next to nothing, assuring low shipping costs. They can be covered with a wide range of materials – foil, paperboard, heat shrink film, you name it. The closure equipment, itself, is available from Ekco Alcoa on either a sale or rental basis. *Encore*, surprisingly low unit cost is made possible by modern mass production methods. Your nearby Ekco Alcoa distributor will be happy to furnish details. Or write direct. **EKCO-ALCOA CONTAINERS INC.**

GENERAL OFFICES WHEELING ILLINOIS

*The Plus Container*

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# Now...get clarity and toughness

# COMPARE

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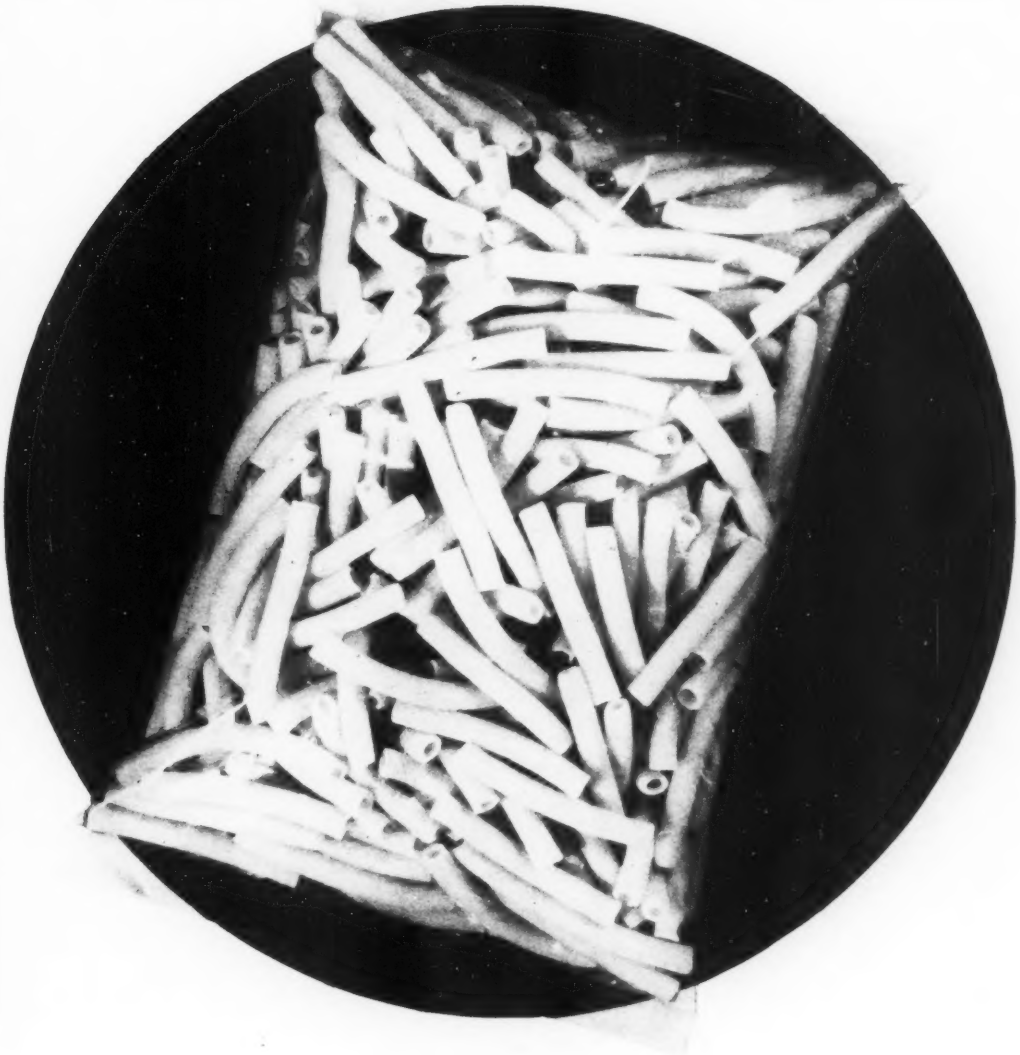
This is it! The polyethylene film specifically designed for bag packaging that gives you both clarity and toughness . . . Du Pont's exclusive new 2-in-1 polyethylene film. Compare it with the clearest polyethylene bag films you can buy today. You'll find it's just as clear. Compare it with the tough polyethylene bag films. You'll find that only the hazy, high-impact polyethylene films are as rugged.

# in a single polyethylene film!



Where can you get it? Du Pont 2-in-1 polyethylene film is now available in printed roll stock and bags through Du Pont Authorized Converters . . . or plain roll stock from your Du Pont Representative. Call an Authorized Converter or Du Pont Representative for all the facts on this latest advance from Du Pont . . . leader in packaging film for 35 years. Du Pont Company, Film Department, Wilmington 98, Delaware.

DU PONT polyethylene film

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BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY

*Lodge & Shipley*

# CLIMAX

## "HEADS UP"

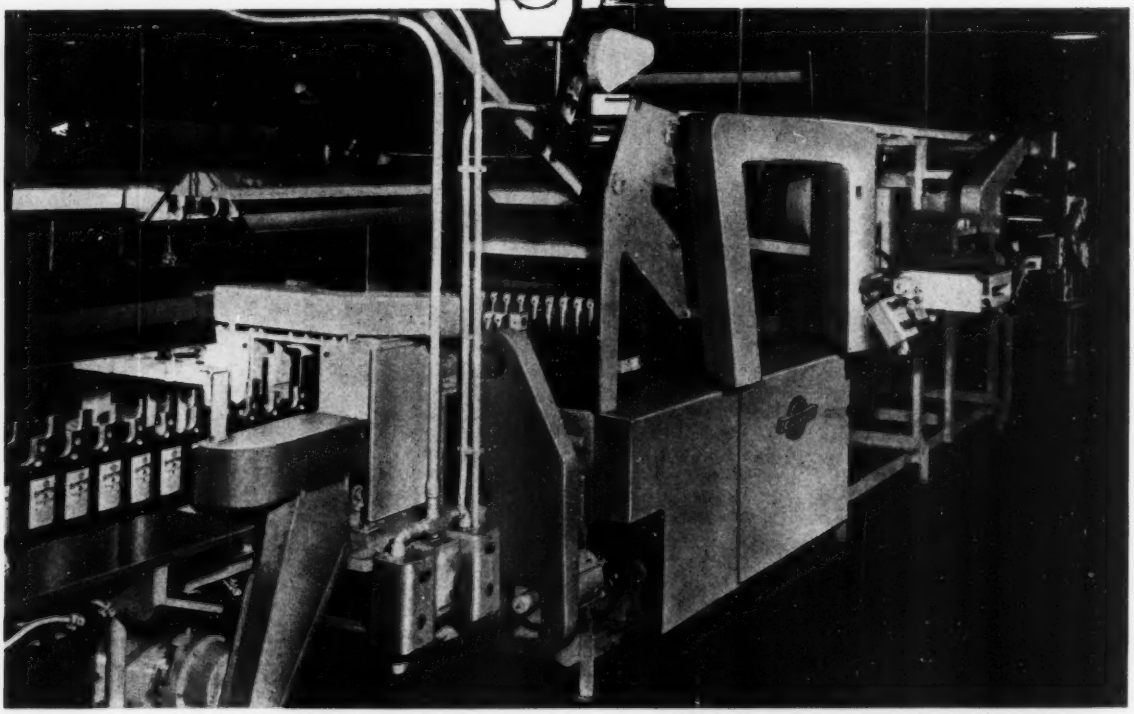
## automatic case packer for "bottled" goods . . .

- High speed . . . up to 25 cases per minute
- No damage to bottles, labels, seals
- Packs various shapes and sizes: ½-pints, pints, fifths, quarts, ½-gallons and gallons
- Quick changeover
- Fully automatic from infeed conveyor to finished case

Now you can have high speed packing of bottled goods and other containers . . . glass, plastic or metal . . . without damage to bottles, containers, celo-seals, neck bands, tax stamps or labels. The CLIMAX Automatic Case Packer is fast, yet inserts containers into cases with care and precision unmatched by slow human packing.

"Heads-Up" loading means that bottles or containers are lifted into a bottom-open case . . . instead of being dropped or scuffed into the dividers. The entire machine requires less attention than standard labeling and filling equipment.

The CLIMAX Automatic Case Packer will fit into your packaging line . . . for complete details, request illustrated catalog showing case and bottle limits, other factual information.

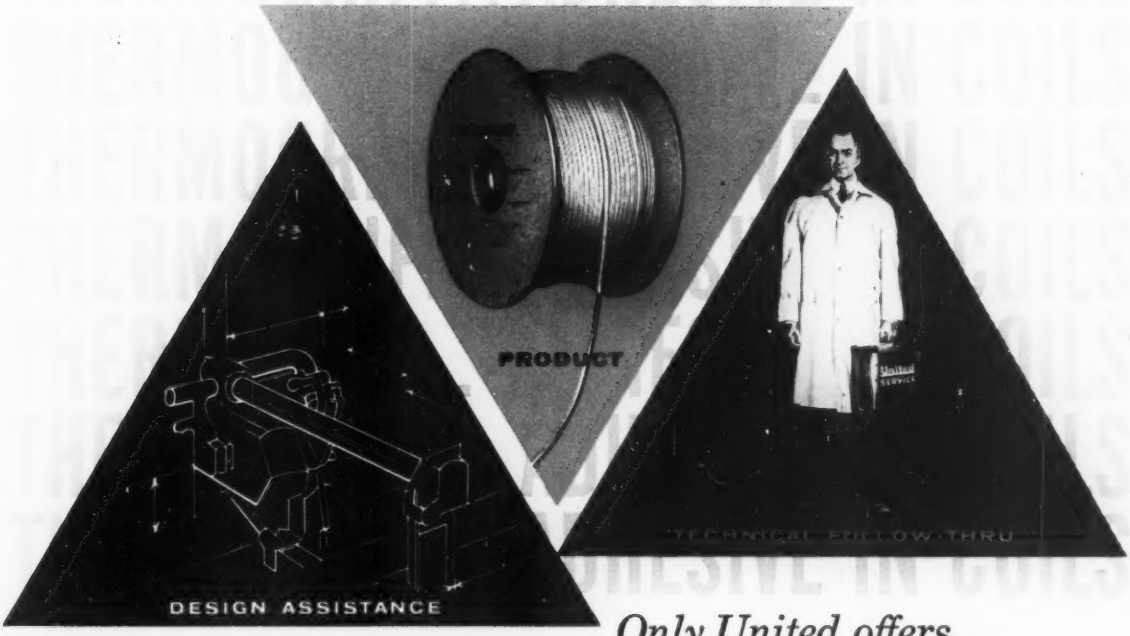


### AUTOMATIC OPERATION SEQUENCE:

1) Bottles or other containers are received in one or two lanes
2) . . . are arranged in case pattern
3) Cases are automatically fed and positioned
4) Containers are loaded "heads-up" from the bottom
5) Bottom pad is inserted
6) Flaps are glued and closed

**CLIMAX**
**PRODUCTS DIVISION**

The Lodge & Shipley Company • 3055 Colerain Ave. • Cincinnati 25, Ohio

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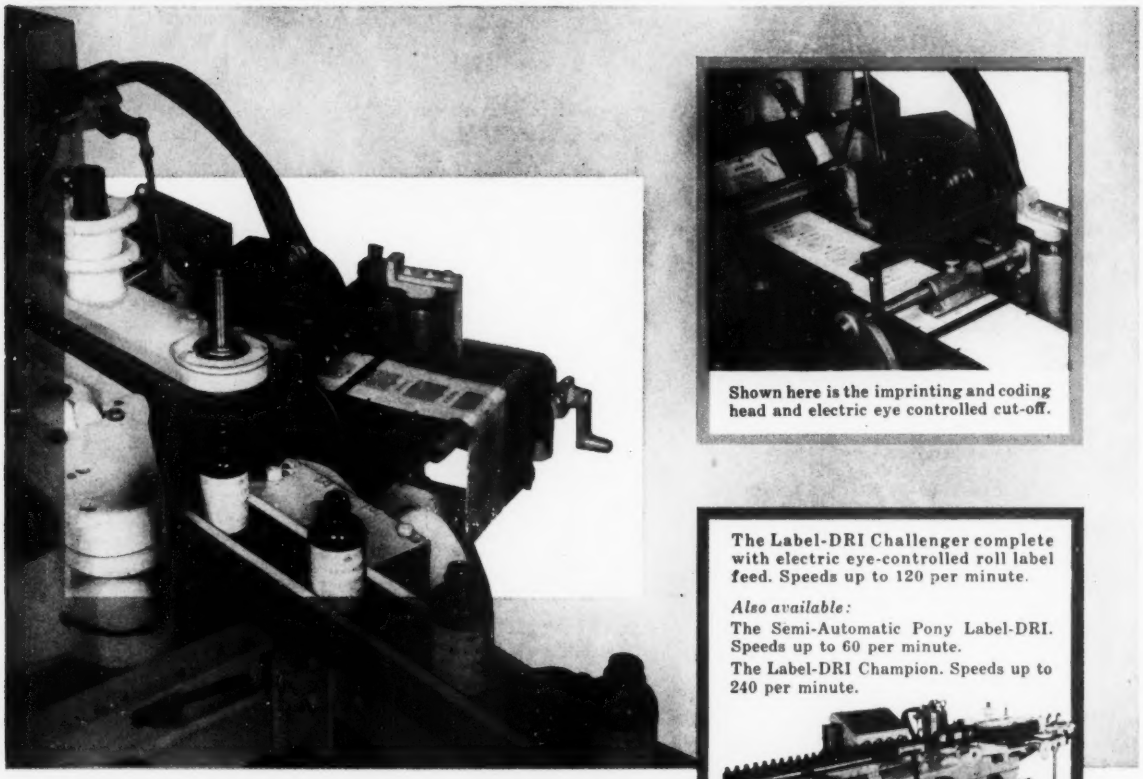



Shown here is the imprinting and coding head and electric eye controlled cut-off.

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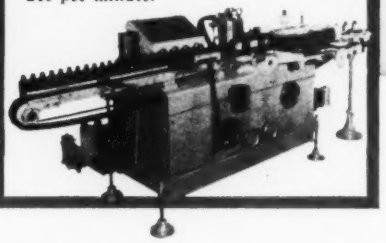

## Three New Jersey Label-DRI models now available

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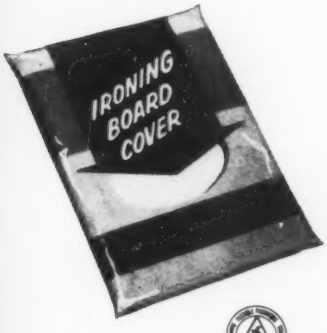


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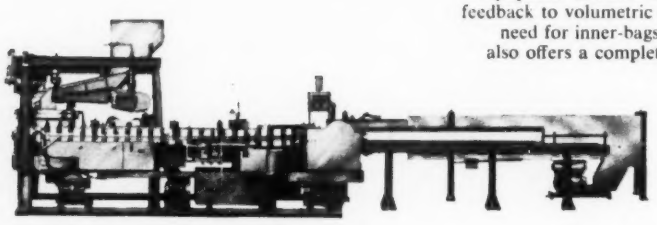

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# EDITORIAL MEMO

## A new cover series

With this issue, MODERN PACKAGING begins a new cover series called, simply, *Success Stories.*

Many factors enter into the success of a product. It starts, of course, with quality in the product itself. Given that, heavy advertising and strong selling alone often can push the product into the front ranks for a time, even if the package is less than the best. Conversely, a package striking enough to create its own publicity sometimes can produce a temporary success even if the other elements are weak. But solid and lasting success is achieved only when all of the elements are in reasonable balance and it is axiomatic that no product can succeed for long unless the package has the basic qualities of good protection, strong sales appeal and long-range consumer satisfaction.

These are the truths we hope to illustrate with our new series of cover stories. We will start with the fact that success has been won—recently enough to be topical, but over a period of time sufficient to prove that it is no flash in the pan. Then we will take this success apart, to find the keys and expose the winning combination, however it may have developed, through product, through packaging, through sales and advertising.

We will be more interested in products that are moving up than in those that are merely holding a position, however high. The subjects are not likely to be the No. 1 sellers in their fields. They will come from small companies as well as large, new companies as well as old. We will be particularly interested in those which have found mistakes and corrected them.

This month's subject is typical. Qwip aerosol whipped cream is by no means first in its field. But it has come up from nowhere in a few years to rank third behind two long-established, nationally distributed brands. It is the product of a small company (105 employees) which started with a unique processing idea, involving meticulous packaging, and from its single plant in Gustine, Calif., without heavy advertising, now has distribution almost nationwide and in 32 foreign countries. The final element in success is a lithographed can which a year ago was voted the best-designed aerosol package in the country.

For this new series of cover illustrations we will draw on some of America's best-known photographers and artists—all of them new to MODERN PACKAGING—including Hal Reiff, Rudy Muller, Ray Cicero and Jack Wolfgang Beck.

The first *Success Story* starts on p. 90, this issue.

*The Editors*

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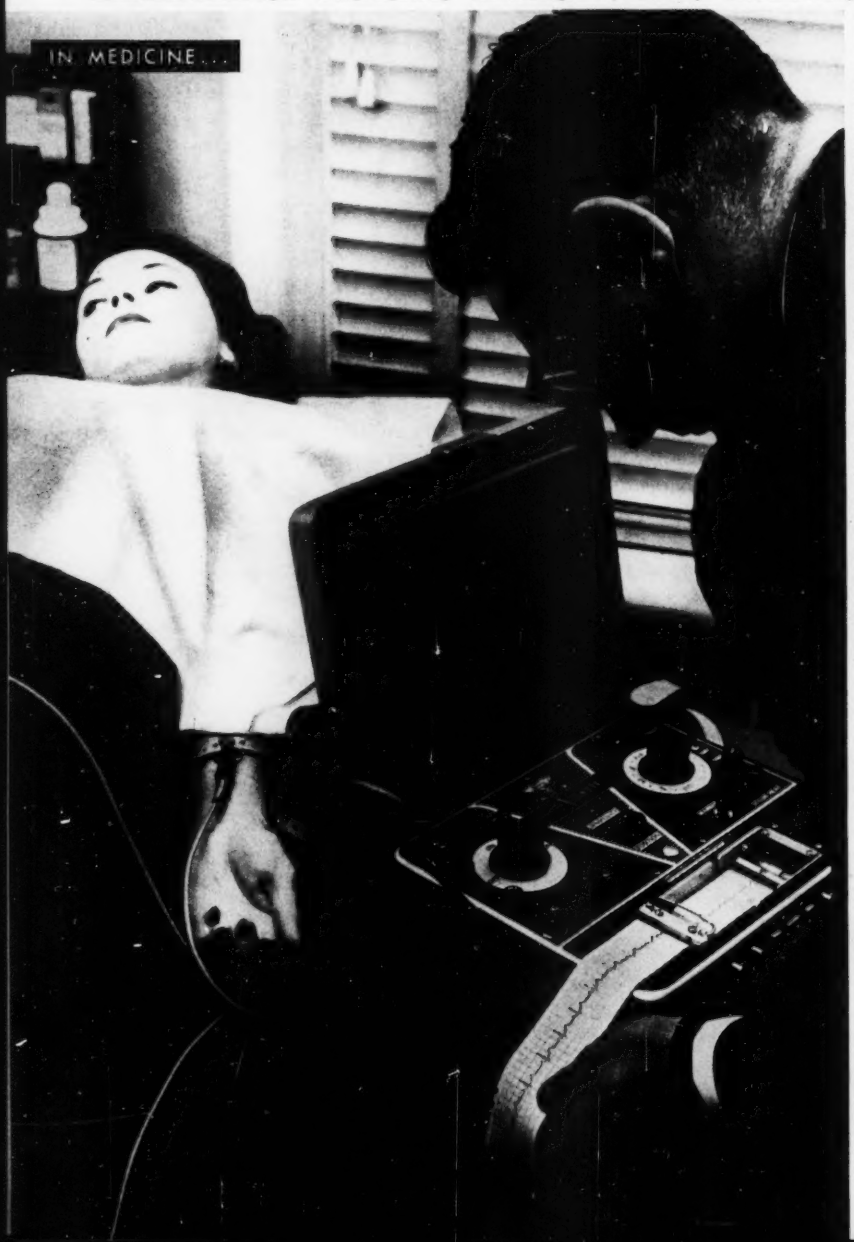
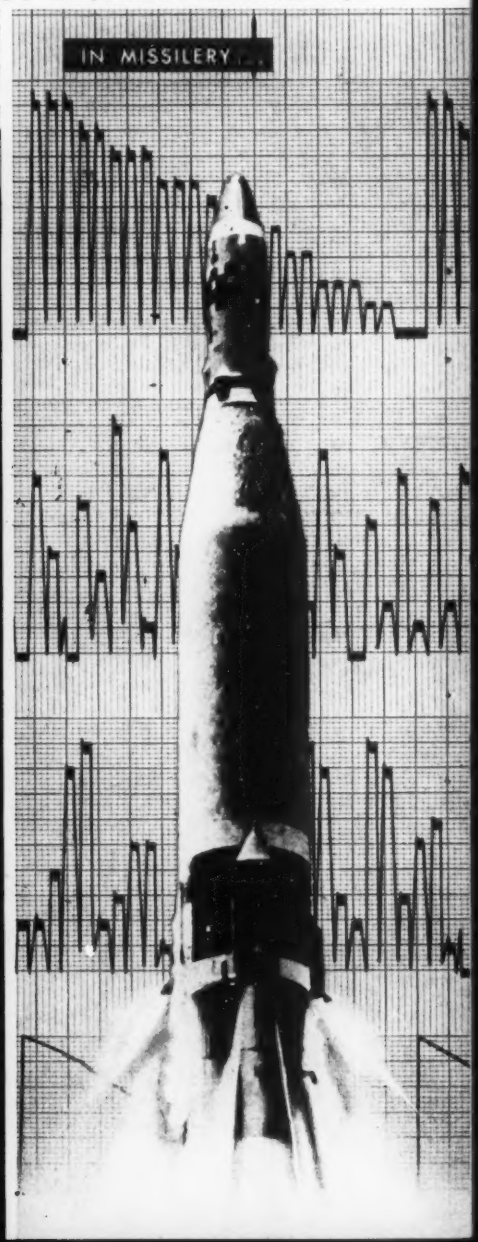


JANUARY 1961 Vol. 34 No. 5

MODERN PACKAGING
THE COMPLETE AUTHORITY OF PACKAGING

# THE SHAPE OF 1961

*It looks like a year of great challenge to packaging—in the fight for profit margins, in the shifting needs of merchandising and in technological changes impelled by low-cost plastics*

If the past 12 months redeemed for packagers most of the promises held out for a pace-setting first year of a dynamic new decade, this second year is no less likely to enhance the potential of the '60s. But a practical survey of the outlook for packaging in 1961 must recognize unavoidable complications that will challenge management ingenuity all along the line.

From the changing nature of packaging at this year end, it is possible to pick out certain trends moving with such strength that their dominance in the packaging news of 1961 seems definitely assured. Among these trends, you can:

- Expect the cost-price squeeze on profit to become increasingly critical in packaging. With profits held down despite high volume, manufacturers must seek further economies in packaging.
- Expect a continuing divergence of price in favor of plastics over other materials. This seemingly inexorable trend has reached the point where older materials are joining rather than fighting plastics.
- Expect big developments in foamed plastics of all types—molded, fabricated and thermoformed sheet—and don't overlook impending combinations of paper and paperboard with film foam.
- Expect much wider use of thermoformed plastics-sheet containers—particularly in the food field.
- Expect shrink films to become more important, due largely to their efficiency to combine items in tight, clear wraps that show off

products yet protect them from handling damage.

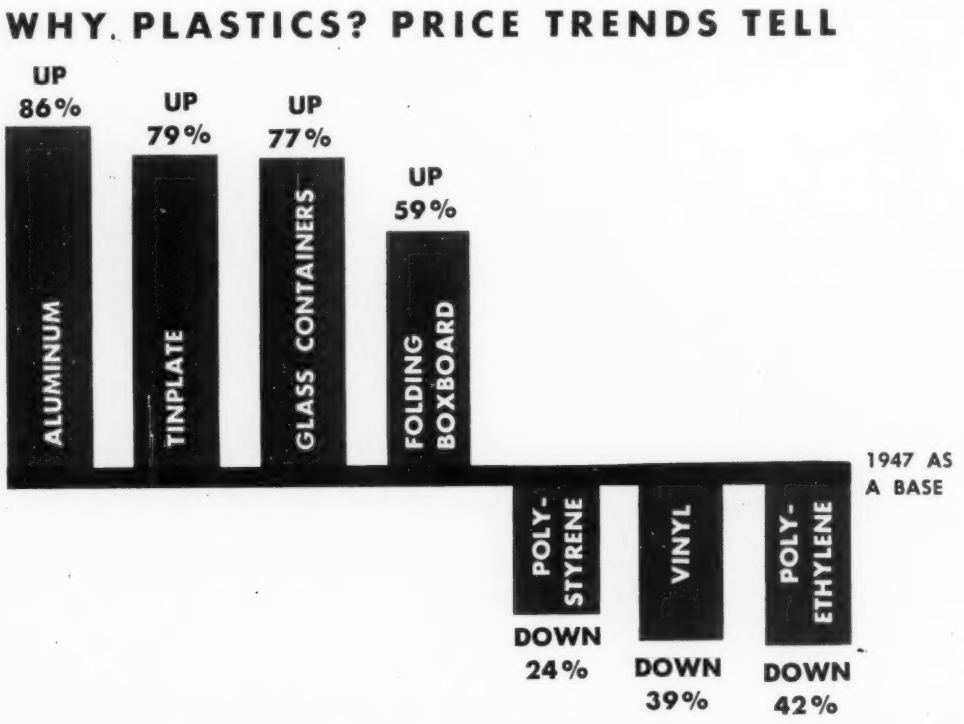
- Expect great expansion of high-density blown polyethylene bottles, moving into bleaches and other household chemicals in large sizes. *(See "Bleaches Move to Plastics," this issue, p. 96.)*
- Expect new advances in aluminum foil trays and cans—the latter being pressured now by the challenge of lightweight tinplate. Together they spearhead a general drive which is aimed at cost cutting through lightweighting.
- Expect an intensification of the battle between metal and glass for the one-trip beverage market. The effects of this competition will range from basic-materials sources to the local bottling plants of major beverage brands.
- Expect an all-out fight by paper and paperboard to retain markets through improved products—many incorporating plastics—and improved packaging construction. Both supplier and packager should profit from expected achievements with these established materials.
- Expect a continuing struggle to solve the Food Additives problem. No personnel changes that may be expected in Government will slow down the demand for compliance with the law.

These are among many areas in which packagers this year either can fall behind or can fulfill potentials for lower packaging cost, for upgraded efficiency, for broader marketing horizons and for more solid competitive footing.

## The squeeze on profits

Possibly the biggest problem confronting every packager today is the cost-price squeeze on profits. A recent Dun & Bradstreet survey of 760 manufacturing firms reveals that these companies believe the conflict of cost and profit is far and away the most important issue of this year . . . or 1965 . . . or 1970.

And packagers' concern over the profit picture is sharpened somewhat by a current mild recession (the more optimistic call it "high-level stagnation") which tumbled the Gross National Product $2 billion in the third quarter of 1960 to an annual rate of $503 billion. However, economists are in general agreement that an upturn will begin in the second half of 1961. Stability of the basic economic indicators and an anticipated rise in consumer spending (U. S. Dept. of Commerce figures reveal that per-




**Diverging prices** *are putting plastics into a constantly more favorable cost position. These estimates of present price levels for basic or typical materials, vs. 1947 levels, are from Government and industry sources.*

PHOTO COURTESY DU PONT.

**A trend to watch** *is in shrinkable films of various types. Here, two rolls of paper towels emerge from a heat tunnel, where the pre-sealed, shrink-type polyethylene film has been shrunk in a matter of seconds to conform to product shape.*

PHOTO COURTESY MONSANTO.

**Vanguard** *of an anticipated army of similar packages in the food field is this cold-formed polystyrene sheet container for California dates. Automatically formed on special machinery, it duplicates with 100% transparency the function of a paperboard box —with little or no increase in cost.*

PHOTO COURTESY AVISUN.

**Broad prospects** *loom for polypropylene, the new plastic whose packaging potential is considered as big as that of cellophane or polyethylene. Ward Baking has adopted the film as a bread wrap for two of its best-selling loaves. With excellent machinability, it is basically low in cost.*

sonal income rose 5.5% in the first three-quarters of 1960 compared with the same period of 1959) are seen as forces that will raise the economy.

While it seems safe to say that packagers need not worry about a serious recession this year, the basic question remains: How do you beat the profit squeeze between rising packaging costs and the insatiable, continuing demand for upgraded container appearance and refinements?

Answers to this vital question are being provided in many areas of the packaging function and the prospects are for greater advancement as we probe deeper into the decade. Following are the major trends at work to ease the profit squeeze on packagers of consumer and industrial goods.

### Price trends in materials and containers

Packagers can be encouraged by a general stability in the cost of materials and containers. In some areas—notably plastics and certain types of glass containers—cost curves are trending downward. *Polyethylene*, for example, has become "a brand-new material" since the recent price drop from 32.5 to 27.5 cents per pound for standard low-density polyethylene resin. Cost of 1-mil low-density polyethylene film is now 1.6 cents per 1,000 sq. in. —just about half the cost of 300MS cellophane. And the reduction, which also includes coating and molding grades of resin, is beginning to affect the economics of all the packaging materials that benefit from polyethylene's properties.

A move to greater use of *polyethylene coatings* on paperboard and corrugated is already apparent. According to Union Carbide Plastics Co., the growing demand for inert, sealable, protective coatings on food-grade board and other folding boxboard will expand the volume of polyethylene paperboard coatings from the present 3,000,000 lbs. annually to 50 million pounds by 1963.

Significantly, three of the major producers of paper milk containers have announced polyethylene coatings in recent months. Lever Bros. is marketing "Nifty," a liquid cleanser, in a plastic-lined fibre can—possibly the first big liquid-tight application for this type of container.

A plastics-cost change with great significance for the future is the cut in price of *oriented-polystyrene sheet* from 57 to 47.5 cents per pound in a range

of gauges. This may be just the nudge needed, considering recent machinery advances, to bring this thermoforming material into real prominence as a container for packaging foods.

Further advances for economical packaging of foods may soon be discovered in thermoformed cups and trays of *polypropylene* and *linear polyethylene*. As an indication of what may be expected from thermoforming materials, a top-ranking executive in one of the nation's largest food companies predicts that within two years, 50% of all frozen foods will be marketed in thermoformed plastic packages. An all-plastic milk carton formed by two thermoformed halves of vinyl sheet is being tested.

A sure indicator of things to come in this field is the fact that two major food packers are showing definite signs of interest. Birds Eye is test marketing frozen staples in clear, high-density polyethylene containers (see p. 164) and Armour is testing a molded polypropylene container for frozen foods.

Certainly *polypropylene* will become a familiar material in 1961. Price of the film has been cut from 93 to 70 cents per pound, which brings 1-mil film down to 2.3 cents per 1,000 sq. in. Nine large companies in the U. S. are producing or plan to produce this material, whose packaging potential may be as big as that of cellophane or polyethylene. By the end of 1960 more than a dozen uses had developed for the film—including the big field of bread wraps (*see "The First Polypropylene Wrap," Oct., 1960, p. 109*)—and there was increasing interest in polypropylene for molding in various forms, among them closures which may need no liners.

Polypropylene is, in fact, ready to make a big bid for the injection-moldings market. Its use in this area is expected to quintuple by 1962, to some 40 to 50 million pounds annually.

*Shrink-film packaging* appears certain to make impressive headway this year. Already on the market are some half-dozen films that combine the properties of rapid shrinkability under heat with sparkling clarity and toughness. Machinable and heat sealable, these versatile materials are on the threshold of vast new markets. They can be used as shrink wraps for bundling "deal" combinations of related products; as shrink covers for foil and molded-pulp food or general-merchandise trays; as smooth-fitting tubes for an almost unlimited variety of products, both singly and in multiples; as protective and appealing shrink sleeves for tray-packaged fruits and produce, and as twist-tied or heat-sealed contour packages for bulky produce items (such as lettuce) or for poultry. The possibilities for shrink-film packaging are limitless.

An important new source of packaging economy appears in the *foamed-polystyrene* field, particularly extruded sheet and film. In 10-mil gauge, suitable for thermoforming, it now costs as little as 6 cents per 1,000 sq. in. Other plastic sheet materials are three to four times that price. The film grade may prove cheaper than paper—and there are great possibilities in combination with paper and board.

It appears that consumer desire, as well as economics, is impelling the big push to plastics. And

## Some packaging ideas of today and tomorrow

PHOTOS COURTESY ALCOA

**A growing trend** *is to decor packaging, where brand identity gives way to aesthetic appeal. Here, wrap-around label on White King cleanser can strips off to reveal "brandless" decorative foil-wrapped container.*

**Projected market** *for semi-rigid foil is the packaging of fresh meats in oven-ready pans that can go right into the broiler or oven. Ease of disposal is an asset, eliminating for consumers the nuisance of clean-up.*

**Two rising materials** *are combined in this foil tray with rigid clear-plastic reclosable lid. Crimped-on cover offers protection and product visibility, while satisfying the need for stackability on retail shelves.*

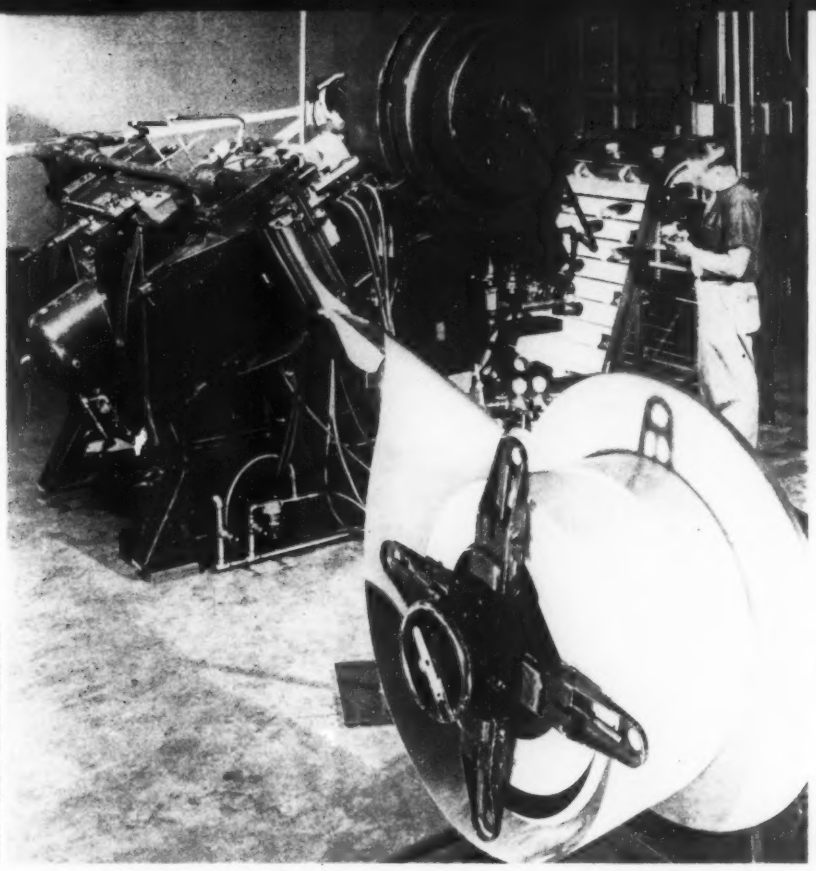


PHOTO COURTESY CENTRAL STATES CAN.

**Newest technique** *in aluminum-can fabrication is this fully mechanized process for making drawn containers from coil-fed stock, now in operation at Central States Can Corp. Pre-enameled coil stock, supplied by Kaiser Aluminum, is fed into an E. W. Bliss machine for blanking and drawing at speeds up to 240 cans per minute. Covers for these cans (of either conventional or a new tear-tab type) are manufactured separately.*

it is consumer desire, of course, that dictates attention to consumer features. In a recent comprehensive survey on packaging by *Sales Management*, "plastic packaging" was overwhelmingly the choice of housewives as the recent packaging development "most appealing" to them.

Among non-plastics, *glass containers* as a whole showed a continued stability in price in 1960. This was apparently due mainly to new achievements attained in lightweighting of glass. Meanwhile, *can* prices—both for tinplate and aluminum—are up slightly, effective Jan. 1. Trade sources estimate the increase at from 2 to 2½%.

Beverage packagers, particularly, stand to gain in 1961 from an intensification of the struggle between one-trip glass bottles and metal cans. Spurred by acceptance of the so-called "glass-can" bottle, glass-container sales last year moved upward to some 160.5 million gross, about 5% higher than in 1959. Projections for first quarter 1961 indicate a 9% sales increase over the same period last year.

On the other side of the fence, shipments of *cans* for soft drinks alone reached an all-time high last August, boosting the eight-month total for this use to 54,667 tons. The Can Mfrs. Institute, source of these latest available figures, notes that total consumption of cans for soft drinks in 1959 was only 49,103 tons. A leading can supplier estimates that 800 million soft-drink cans were produced last year, that 1961 volume will advance 50% over 1960.

In any consideration of packaging materials, no company should underestimate those two old standbys, *paper* and *cellophane*. Paper and paperboard still account for nearly 50% of the dollars spent on packaging. Cellophane is still bigger than all other packaging films combined and is growing. As an ideal substrate for a wide range of functional high-barrier coatings and laminations, cellophane is taking on a new packaging role as a specialized material giving maximum protection and appeal to a broad variety of products. *(See "What's Happening to Cellophane?" Aug., 1960, p. 85.)*

### Economics of lightweighting

One of the great opportunities for reduced packaging costs in the year ahead is the continuing

PHOTO COURTESY ALCOA.

**Advanced idea** *in economy and efficiency is in-plant extrusion, decorating and filling of aluminum cans for beer and beverages. Lightweight, two-piece aluminum can for Coors beer here is contrasted with conventional glass bottle. With a tear-tab opening, such a can might be the utmost in beverage-packaging convenience.*

## Everybody's getting into plastics

*Among the more than two dozen acquisitions or new plastics-producing facilities announced in 1960 by suppliers of materials other than plastics:*

BEMIS BRO. BAG CO. acquires a controlling interest in Air-Formed Products Corp., manufacturer of blow-molded plastics.

BROCKWAY GLASS CO. enters the blown-plastic bottle field and purchases Celluplastic Corp., producer of plastic tubes and vials.

CHAMPION PAPER & FIBRE CO. purchases Crown Plastic Cup Co., maker of disposable foam-plastic drinking cups and other injection-molded items.

DENNISON MFG. CO. forms a new subsidiary, Howard Plastics Co., to produce blow-molded bottles and other plastics items.

GENERAL BOX CO. creates a new division for the production of polystyrene foam for use in packaging.

INTERNATIONAL PAPER CO. sets up a Paper-Plastics Sales Co. for the production of paper-plastics combinations for packaging.

LASSITER CORP., now a division of Riegel Paper, purchases Print-A-Tube Co. and trebles its laminated-film production capacity.

PACKAGING CORP. OF AMERICA enters the plastics field with the acquisition of Worcester Moulded Plastics Co., producer of expanded polystyrene and injection-molded plastics products.

RAP-IN-WAX CO. acquires National Packaging Corp., maker of plastics trays and blister packages.

RISDON MFG. CO. opens a Plastics Div. to produce aerosol-container components of nylon, polyethylene, polystyrene and acetal resin.

SUN CHEMICAL CORP. purchases Dyna-Foam Corp., manufacturer of thermoplastic-foam sheeting.

WHEATON GLASS CO. forms a new company, Wheaton Plasti-cote Corp., for the manufacture and sales of plastic-coated glass aerosol containers.

development of lighter-weight materials, with equal or superior performance characteristics, that effect economies in both container and shipping costs.

Glass-container lightweighting is progressing steadily from beverage bottles into jars and other mass-market forms.

Featherweight foamed plastics in rigid form are coming into wider use as protective, decorative containers—many without overwrap or other supplementary packaging material. Look for wider use of a jar molded of foamed polystyrene, internally coated to hold most products normally packaged in glass, at a major saving in weight. *(See "Foamed Plastics on the Rise," Oct., 1960, p. 95.)* Further impetus to this development undoubtedly will be given by new semi-automatic and automatic machinery for molding expandable polystyrene. One machine just on the market provides (1) automatic loading and discharge to speed the cycle and reduce labor, (2) flexibility in number and size of packages formed and (3) accuracy of molding to meet tolerances needed for containers that must be run on high-speed filling and closing equipment.

The new year will certainly see further growth in an expansion of the use of lightweight corrugated outer containers with liquid-tight flexible plastic inner containers of various types.

But the surprising news in lightweighting today is in the metal-container field. Until now, the attempt to give packagers a lighter-weight metal container has been the exclusive province of aluminum producers. But 1961 will see the first commercial use of a 50%-lighter tinplate, a product of United States Steel. The low-cost metal, called Ferrolite, is said largely to offset, in comparable gauges, aluminum's weight advantage, while offering good strength, rigidity and dent resistance. Other steel producers are reported preparing to bring out comparable types of materials.

U. S. Steel is now making available sufficient quantities of Ferrolite (at $6.10 to $6.65 per base box, compared with $7.58 for conventional tinplate) to permit extensive test runs. American Can and Continental Can will produce Ferrolite cans this year for citrus concentrate and motor oil. For the moment, can makers believe the lightweight can is restricted to products that are not heat processed or otherwise subjected to pressure.

Just as aluminum cans have appeared in various combinations with other materials, Ferrolite may find important use as a body material with aluminum ends. One factor suggesting this possibility is the successful test marketing by Minute Maid for a low-cost (10% less than tinplate) fibre-foil-bodied can, with aluminum ends and a tear-strip opening on top. This easy-opening can, by Alcoa and United

Shoe Machinery, has been joined by another tear-open all-aluminum pre-coated can just introduced by Central States Can Co., E. W. Bliss Co. and Kaiser Aluminum. Packagers of baby food, cheese, tuna and processed meats are said to be initially interested in the shallow container, produced at rates up to 240 per minute.

Partly because of a succession of developments in aluminum containers and partly because of expansion of existing markets, Reynolds Metals estimates that total consumption of rigid aluminum cans will rise by 150% to 100 million pounds, in 1961. This same supplier also foresees an upswing in semi-rigid and flexible foil usage—to a total of 337 million pounds by 1965, compared with some 250 million pounds in 1960.

Packagers in 1961 also can look for important improvements in laminated foils, wider use of aluminum cans for the packaging of frozen citrus concentrates, motor oil and beer, as well as an increase in application of aluminum for closures.

### Economy on the packaging line

Many product-manufacturing operations have by now been automated to a high degree, speed and efficiency of production being limited only by the packaging machinery. Hence, future production economies will stem largely from development of better and faster packaging equipment.

Frozen-food processors, for instance, are demanding cartoning speeds *right now* of 400 to 500 per minute and they want 800 per minute within five years. Blister-packaging speed has tripled, to 300 per minute and a recent machine achieves 1,000-per-minute packaging speed for free-flowing materials. Automatic-feed attachments may make this speed attainable for solid objects, too. Bottling rates are rising, with new designs in vacuum equipment and bottle-handling mechanisms pushing filling speeds from 120 to as high as 500 per minute without increasing machine size.

Pouch-packaging machinery has been the most laggard of all with regard to speed. The rising tide of pouch-packaged products—particularly the trend to film-bagged loose-frozen fruits and vegetables—requires machinery that can operate at speeds far beyond today's 45 to 75 per minute. Machinery suppliers report that pouch-packaging speeds of 200 per minute will be realized in the next two years by replacing reciprocating mechanisms with high-speed continuous-motion devices.

This technique may also improve the speed of overwrapping equipment. In this field, however, development of new sealing methods may be the real key to better performance. Research is now under way on ultrasonic and high-frequency sealers that could push film-overwrapping speeds past the 200-per-minute mark.

Regardless of how favorable the cost/efficiency balance of a container may be, packagers and package designers also must keep a sharp watch in 1961 on shifting developments in merchandising.

## New influences on merchandising

Evolving trends in mass marketing, changing consumer habits, the demand for convenience (which goes hand in hand with "table-accessory" package design) and the growth of new processing methods are among the factors that are bound to make an impact on packaging in the year ahead.

The supermarket concept of self-selection, now undergoing a fundamental change, will continue to upset traditional merchandising patterns. There are signs that supers are abandoning competition solely on a price basis and are developing new merchandising policies to build store personality and new operating practices to solve traffic and space problems. *(See "The Supermarket: What's Happening?" May, 1960, p. 83.)* Some authorities believe that traditional multiple facings of packages on shelves may be doomed to make way for the increasing annual flow of new products (an estimated 8,000 in 1960, compared with 4,000 a year a decade ago).

All this could mean a complete change in thinking with respect to surface design and package display, and the beginnings of the change may be seen in 1961. Without mass display, new techniques

**Boom in convenience** *pushes aerosols further into the food field. An example: this coated-glass spray bottle for Gard Pressure Foods' garlic-flavored food seasoning.*

PHOTO COURTESY OWENS-ILLINOIS.

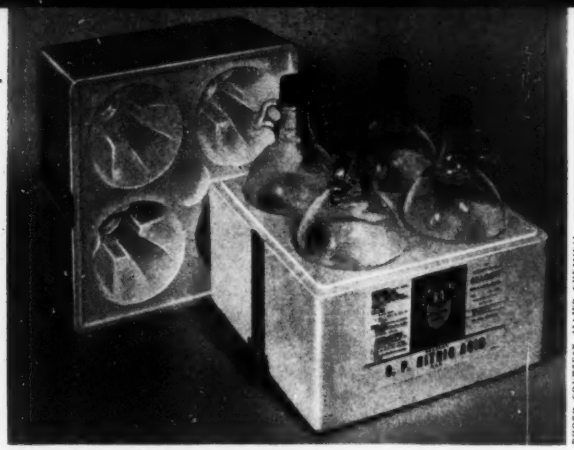


PHOTO COURTESY ALLIED CHEMICAL

**Sensation of the '60s** *may be featherweight foam plastics. Containers such as this expanded-polystyrene shipper for a bottled liquid chemical combine extremely low shipping weight with superior protection and handling ease at low cost.*

may be needed for brand emphasis and to insure carry-over brand recognition in the home.

The consumer is changing, too. Higher average family incomes (expected to reach $7,500 by 1970) and more family units (the Census Bureau projects U. S. population at 210 million in 1970, representing 66 million families) mean great new merchandising opportunities ahead. And with more money to spend, a better-educated citizenry will develop more sophisticated tastes, which undoubtedly will be reflected in its buying habits.

Changes that are taking place in the retail merchandising concept and in consumer preferences already are making their impact felt in a trend to a higher level of esthetics in packaging design. *(See "Graphics 1960," Oct., 1960, p. 106.)*

### Convenience

The most important word in packaging today is "convenience." It is regarded by many packagers as the one remaining way to improve the marketing position. So you can look this year to an avalanche of innovations in opening and closing devices to end consumer complaints of hacking and probing at cans, bottle caps, cartons and bags. There will be products in new forms that are easier to use because of packages that are easier to store, easier to handle and easier to dispose of. *(See "Convenience is King," Nov., 1960, p. 93.)*

There's plenty of evidence that American housewives, particularly the 50% of them — a force of 13 million — who hold jobs, are more than willing to pay for convenience if the cost is justified by savings in housekeeping time.

Heat-and-eat containers, boil-in bags and water-soluble film pouches will continue to ride the crest of the convenience wave. Take boil-in-bag frozen foods as an indicator. A. R. Marusi, president of The Borden Chemical Co., forecasts that the consumption of polyethylene and polypropylene film in this market alone will triple in the next five years, to 300 million package units.

What about aerosols? The outlook for this convenience packaging form is brighter than ever. New mechanical developments and propellant formulations are widening the range of products that can be packaged in aerosol containers for spray or solid-stream dispensing, including many more foods. And this year will see widening application of uncoated glass aerosols, using low-pressure propellant for such items as toiletries and cosmetics.

Look during 1961 for commercial application of a piston-action pressure can that keeps the propellant away from the product to insure solid-stream dispensing of such heavily viscous products as peanut butter and ointments.

Look also for aerosols to figure more heavily in the powdered-products field. According to reports, developments in propellants and techniques have improved powder dispensing so that a considerably higher percentage of the product can be expelled by the consumer from a pressure can.

Break-resistant, easy-to-handle high-density polyethylene bottles — one of the biggest convenience-packaging successes — also are moving toward broader horizons. Wide expansion into such liquid-product fields as household bleaches, shampoos and chemicals will come as soon as blow-molding capacity can exceed the overwhelming demands being made by liquid-detergent producers.

Dealers also are seeking greater convenience packaging. Pressured by the shortage of help and by raising labor costs, store operators will look with increasing favor on products which are packaged

**Coming developments** *in convenience packaging, such as this "new-concept" polyethylene squeeze-tube butter dispenser, are limited only by the imagination of present-day package planners.*

PHOTO COURTESY BRADLEY-SUN

PHOTO COURTESY KAISER ALUMINUM.

**New design concepts** *are developed around unusual shapes in folding paperboard cartons, many incorporating colorful foil surfaces.*

for easier handling. They want such things as clearly identified shipping cases adaptable to tray stocking, easy-opening tear strips and price spots conveniently located on the package for marking within the shipping container or tray. *(See "The Trend to Trays," Sept., 1960, p. 101.)*

### New product-processing methods

New methods of food processing in the next few years will create needs for new packaging concepts. Frozen-food packagers are becoming more concerned with freeze drying and there is at present a new emphasis on loose freezing.

Freeze drying is a dehydrating procedure that involves first freezing the product, then subjecting it to high vacuum to remove as much as 98% of the moisture by sublimation, a process which remarkably preserves taste and nutritional factors. One advantage of this process is that the food product can be stored indefinitely, in much smaller volume, without refrigeration or loss of flavor.

The question of the best package for freeze-dried foods is still under study. It must be light weight for shipping economy, yet hermetically sealable. Promising experiments with various combinations of barrier materials are being made.

Loose freezing of vegetables and fruits appears to be in the midst of a boom. The economy and convenience of putting up pourable frozen foods in reclosable polyethylene bags or pouches have great appeal to processor and consumer alike, as illustrated by initial acceptance of this "pour-and-store" package. There are only two questions that remain to be answered: (1) How can the bags be displayed to advantage in retail cabinets? (2) How can the loose vegetables be prevented from solidifying into a lump during the distribution cycle?

Consumer demand for the bagged frozen foods may well force a solution to the first problem. Acceptance by the states of a new code for frozen-food distribution that would eliminate conditions of thawing and refreezing—recommended by the Assn. of Food & Drug Officials of the U. S. and already adopted by Massachusetts—may settle the second.

Regardless of problems, the prospects are for greater advancement in all frozen foods. A Government report reveals that total packaging of frozen vegetables alone has risen from 563 million pounds in 1949 to 1.6 billion pounds in 1959.

### Conflict in containers

Paradoxically, the demands and opportunities posed by greater container convenience and improved performance are pulling the packager in two directions at the same time: toward simpler, more economical packages and toward more complex containers with built-in consumer values.

In one container alone—the frozen-food package—both influences are evident. Seeking to reduce the complexity of the packaging operation, companies have stimulated development of cartonboards coated or filled with waxes and resins to eliminate the need for inner liners and overwraps. While this new packaging form has simplified the packing operation, it has also generated complexities in carton design. *(See "Approaching the Single Wall," March, 1960, p. 143.)* When sealed with hot-melt or cold-resin adhesives, single-wall cartons are so hard to open that special tear strips or perforations must be added to the package.

To a lesser degree, this conflict between simplicity and complexity influences other packaging forms. Plastic bottles started out as simple squeeze containers, but their inherent convenience has been built upon with increasingly complex attachments to control dispensing. The [*Continued on page 171*]

# Packaging tops $20 billion

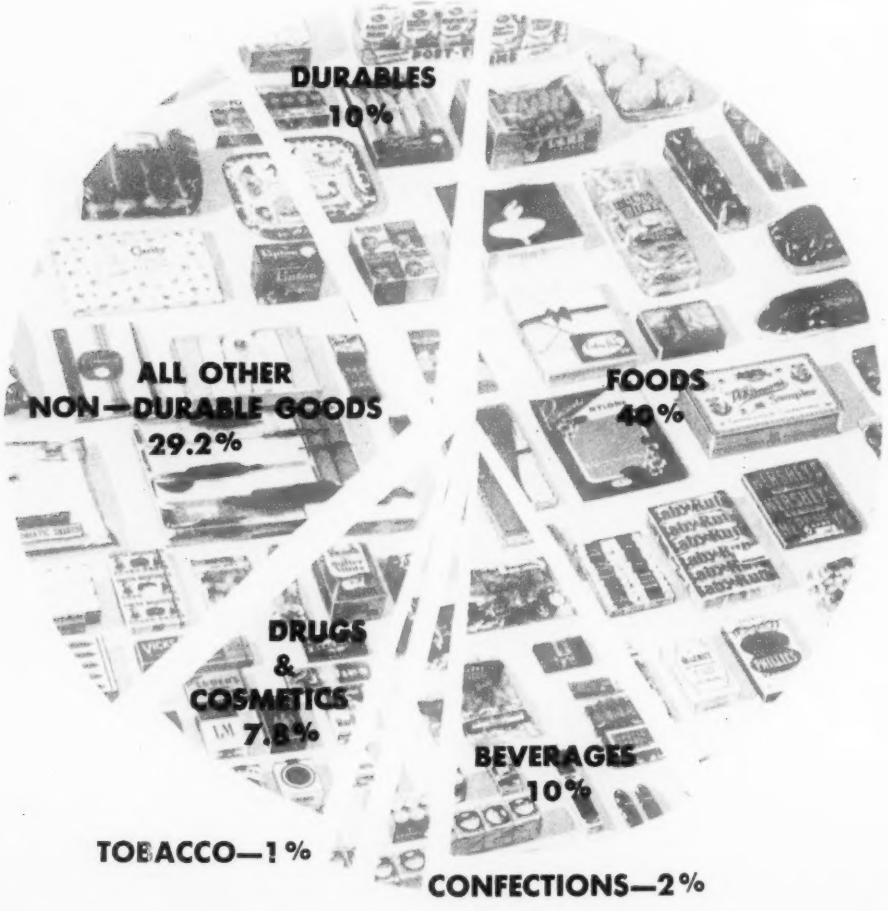
*New estimates, based on 1959 figures, indicate present total expenditure per year is one-third greater than in 1956; new breakdowns by products show foods take 40%*

Figures now available from the Department of Commerce and industry sources indicate that the nation's total expenditure for packaging is currently running in excess of $20 billion a year. This is an increase of about one-third since MODERN PACKAGING's last over-all estimate, in January, 1957, which placed the figure for 1956 at $15½ billion.

The new estimate is based on a tabulation of the manufactured value of all packaging materials and machinery, appearing in the MODERN PACKAGING *Encyclopedia Issue* for 1961, which is now being distributed. Figures, from Government data and industry estimates, total $10,172,150,000 for 1958 and are projected to $10,973,012,000 for 1959.

This tabulation, however, covers supplies only and does not include added expenditures in packagers' plants, such as contract packaging, consulting services, package design and laboratory

HOW THE PACKAGING DOLLAR BREAKS UP



testing, research and engineering. Nor does it include packagers' very sizable charges for direct labor and overhead in assembling, filling, handling and shipping packaged goods. Specific figures for these costs are not available from any source.

However, it is now an accepted theory that these in-plant packager costs average about three-quarters of the cost of materials and machinery. By this rule of thumb, it is possible to arrive at a grand total of approximately $17,300,000,000 for 1958 and $19,200,000,000 for 1959.

With the price increases and higher labor rates that went into effect in most categories in early 1960, plus the known growth of the Gross National Product, it is apparent that the figure for 1960, when available, will easily top $20 billion.

From additional studies, as shown graphically in the charts on these pages, MODERN PACKAGING has been able to trace the distribution of the more important types of packaging materials among the largest packaging-consuming industries. The charts are based on the Government-industry figures for 1959, as reported in the new *Encyclopedia Issue*, with end-use breakdowns by supplier trade groups.

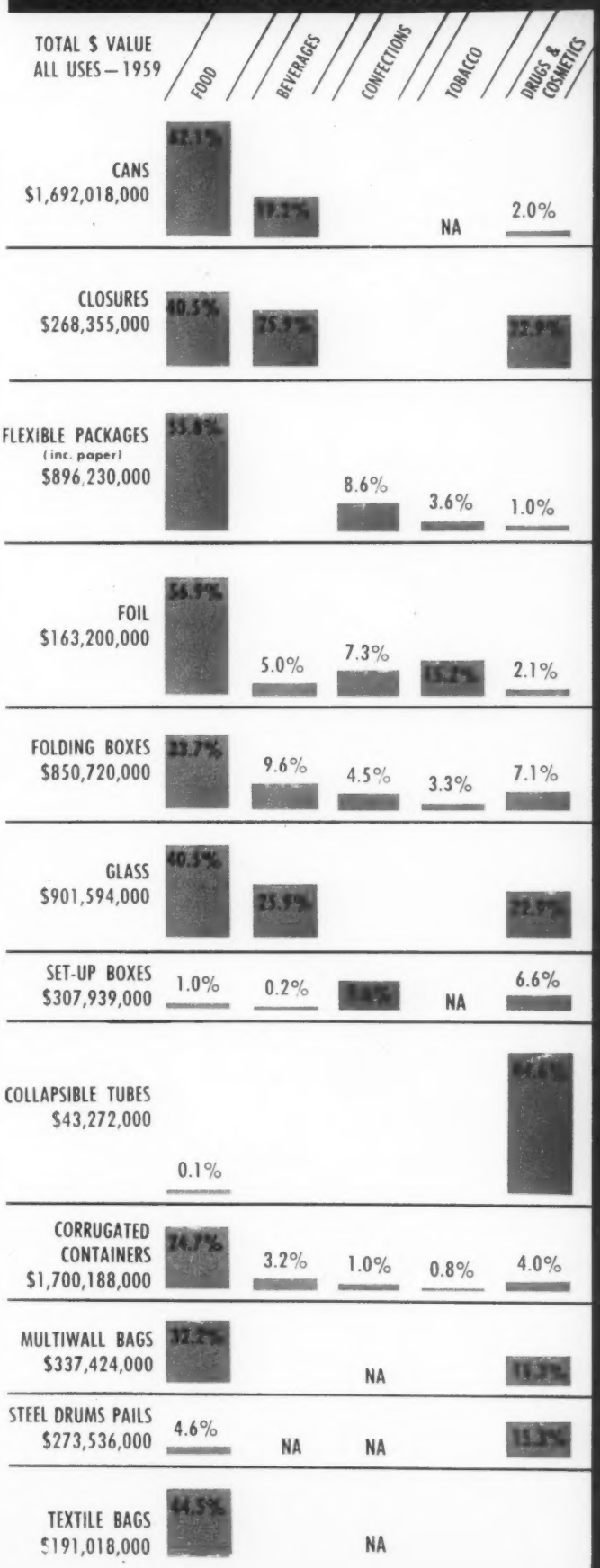
The bar chart at the right indicates the approximate percentages of the 12 biggest container types being used for foods, beverages, confections, tobacco, and drugs and cosmetics. The total 1959 dollar value of these container types is indicated in the left-hand column. Where product columns have been left blank, it is because use of that particular type of package was insignificant or because the figures were not available (NA). The 12 container types represented here account for $7,625,494,000 out of the 1959 total of $10,973,012,000 for all containers, materials and machinery.

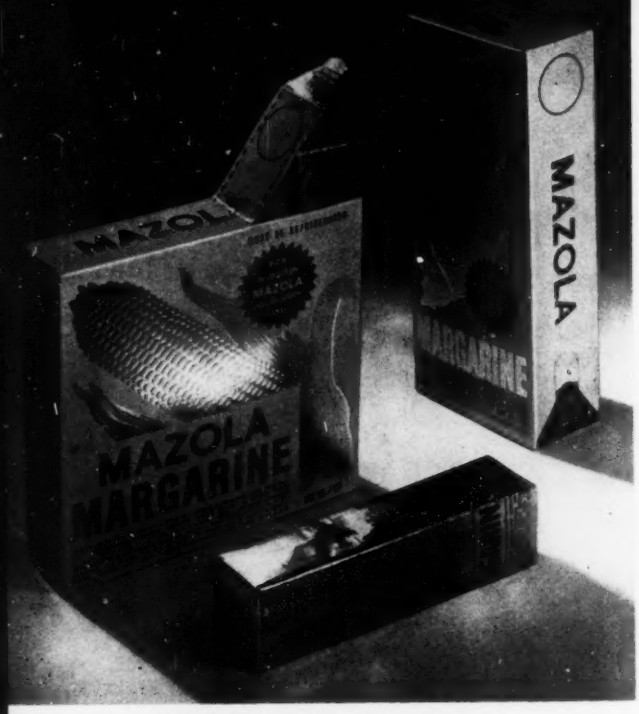
As might be expected, foods are majority users of cans, flexible packaging and foil, taking 62.1%, 55.8% and 56.9%, respectively. Folding boxes are the most widely distributed type of package. Collapsible metal tubes have one predominant customer (drugs and cosmetics, 84.6%), but also have widespread uses for products not listed here.

In the over-all dollar totals, it is interesting to note that cans, at $1,692,000,000, are almost twice the value of glass containers and that flexible packaging is closely pressing glass and, if foil were included, would be ahead.

Break-up of the total packaging dollar is shown in the pie chart on the left-hand page. It is worth noting that foods take only 40% of packaging, dollarwise—far below some previous estimates. Three categories, foods, drugs and cosmetics, grouped together take less than half the packaging dollar, while almost 30% is distributed among numerous other types of non-durable products.

## DISTRIBUTION OF PACKAGING COST






**Design theme** *featuring ear of corn is carried out on printed inner wrap (foreground) and embossed Western-style package (right). Tear-strip opening gives ready access to the four sticks packed in 1-lb. carton.*

# TRIUMPH IN EMBOSSING

*If a picture speaks louder than words. Best Foods with its three-dimensional corn ear on a foil-laminated carton has even more eloquently conveyed a significant sales message*

The dominant design element on new Mazola margarine's colorful carton is a large golden ear of corn embossed on the aluminum-foil surface. This is more than a mere gimmick in third dimension, however, for (1) it represents an initial application of registered aluminum-foil embossing to cartons for low-price foods and (2) it visualizes for consumers the major product advantage of this brand—it is "rich in golden Mazola liquid corn oil," as a slogan says in no uncertain words on a stylized red sunburst "sticker" which has been superimposed on the carton face.

The key words in the slogan are "liquid corn oil." The product story that Corn Products Co.'s Best Foods Div. hopes to get across with this package is that, by a new patented process, Mazola margarine is made from non-hydrogenated liquid corn oil—in contrast with most margarines that contain other oils saturated with hydrogen to solidify and preserve them. A medical theory recently widely publicized is that non-hydrogenated corn oil, unlike most fats, does not contribute to build-up of cholesterol in the blood system, which is blamed for many coronary troubles. In the current cholesterol-conscious market, this is a major sales point.

But regulatory agencies would frown on such a statement on the package, because the cholesterol-coronary theory is not proved to the satisfaction of all doctors. So when Best Foods Div. of Corn Products Co., New York (24,000 employees, $676,377,000 gross sales), made its plans for introduction last October of the new Mazola margarine, it considered these facts:

1. It had to depend heavily on package design to communicate the product's merchandising message to the shopper.

2. Although package design is important in the success of any consumer item, it is most important for items sold primarily through supermarkets, where there is intense competition among packaged goods and where even the strongest advertising message can be wasted if the package fails to attract the attention. Due to display limitations of store refrigerator cases, margarines and similar products especially must rely on the package to gain attention.

3. Best Foods had enjoyed success with a foil-surfaced carton for its Nucoa margarine and believed the same material would denote the quality of the new product, though it realized the design

**Opposite page** *illustrates embossed ears of corn on five-color, foil-laminated paperboard carton stock.*

INSERT COURTESY REYNOLDS METALS.

LA MARGARINE is a delicate and deli-
ble spread—new and completely different
y other table spread including any corn
arine. Through an exclusive process you
id corn oil as its major ingredient. Even
portant, this corn oil is light, golden, highly
us MAZOLA®. Keep MAZOLA MAR-
E refrigerated to protect its fine flavor.

MUST BE REFRIGERATED

OLEOMARGARINE
MAZOLA

MAZOLA

MUST BE REFRIGERATED

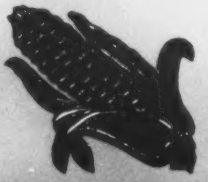
TO OPEN
LIFT THIS
TAB ALONG
ARROWS

RICH
IN GOLDEN
MAZOLA
LIQUID CORN
OIL

MAZOLA
MARGARINE

MAZOLA LIQUID CORN OIL, PARTIALLY HARDENED SOYBEAN & COTTONSEED OILS, SKIM MILK, SALT, MONOGLYCERIDE, LECITHIN, ISOPROPYL CITRATE (0.01%) TO PROTECT FLAVOR & 15,000 UNITS VITAMIN A & 2,000 UNITS VITAMIN D ADDED. ARTIFICIALLY COLORED WITH CAROTENE & ARTIFICIALLY FLAVORED. MINIMUM DAILY NEEDS SUPPLIED BY 2 OZ.: VITAMIN A—47% OF ADULT'S & 62% OF CHILD'S; VITAMIN D—62% OF ADULT'S & CHILD'S.
BEST FOODS DIV. CORN PRODUCTS COMPANY, NEW YORK, N.Y., U.S.A.

NET WT. 1 LB.



MAZOLA

MAZOLA

would have to transmit Mazola's unique features because there are other foil-packaged margarines.

4. It wanted to capitalize on the popularity of its Mazola cooking oil, but also wanted to be sure that the margarine would preserve and strengthen the Mazola trademark's quality reputation.

Best Foods' aluminum-foil supplier had applied registered embossing to foil-paper materials, but it had been confined to such items as holiday wraps for liquor and bottle labels for beer. The same effect on laminated cartonboard for a large-volume food product was a different proposition. An experimental embossed carton for margarine was discarded early because available production methods imposed design limitations.

However, the packager asked for a silk-screen sample of an embossed carton and was shown a suggested design with a small embossed corn ear on the front panel. While Best Foods was pressing for greater visual impact of the ear, the supplier, inspired by a large and embossed ear of corn that Corn Products featured on its 1956 annual report, developed a new embossing method that removed design restrictions. Extra charge for embossing is less than 10%, slightly more than for an extra color.

Three backgrounds for the final gold, red and blue design were considered in consultation with the supplier's design staff. An all-white area was chosen over all-blue and all-white with silver dots because the all-white background simplified the design, permitted maximum space for the ear of corn and created a sanitary connotation to help communicate the product's nutritional qualities.

When the dotted background was dropped, the corn-ear husks were enlarged and spread out to increase the embossed area and reflective surface. Husk area was diminished, however, on a narrower package that is destined for Western markets.

At first, Best Foods suggested the same basic cap-and-lower-case Mazola logotype used on its cooking-oil label. But Federal law requires that each letter of the word "margarine" be as large as any letter of any other word on the package. So an all-capital-letter typeface was adopted.

The sticker-like "bull's eye" containing the product message was tried in several shapes. Among four, a stylized sunburst was chosen to add to the rich, warm feeling of sun-grown corn.

A tear-strip opening on the top panel of the package permits easy access to the margarine sticks. Introduced in the North Atlantic states, the greater Chicago area and Southern California, the new package will soon be in national distribution.

SUPPLIES AND SERVICES: Foil-laminated paperboard carton designed, printed and embossed by Reynolds Metals Co., Richmond 18.

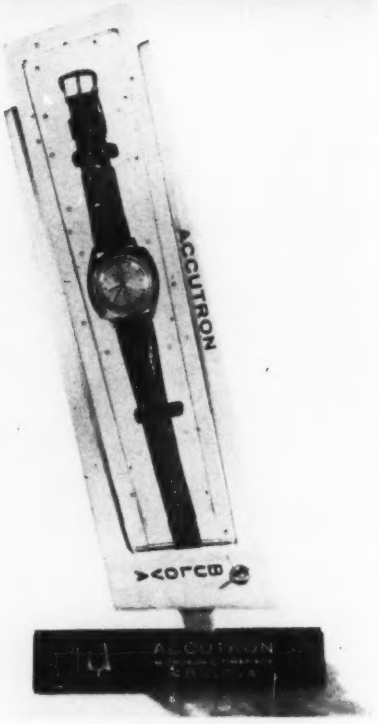
**PRELIMINARY DESIGNS**

*Heart was eliminated because of trite look and lack of cohesion among elements.*

*Dotted background was dropped to permit larger ear of corn and to give simple, clean appearance. Cap-and-small-letter Mazola name was ruled out by Federal law requiring that each letter in word "margarine" must be as large as any other letter on the package.*

*Hand-embossed, gold-foil ear of corn pasted up with other design elements provided first feel of final design of the carton.*

## Space-age package




When the Bulova Watch Co. developed the Accutron electronic wristwatch—a super-accurate "tickless" timepiece with a microsonic timing mechanism incorporating an oscillating tuning fork, such as is used in U.S. space satellites—it reasoned that traditional packaging concepts would not suffice. What was needed, the company decided, was a striking presentation package that would reflect product quality as well as the "space-age" newness of its interior workings.

Bulova feels that the package display unit that has been evolved meets both these requirements. A metal-hinged, injection-molded acrylic watch case, narrower at one end than the other, is free of right angles. Its heavy cover is transparent. The flat base, with a flocked platform for the watch, is tinted deep blue and is hot stamped with gold and white stars, to carry out the "space" theme. Molded-in ridges on the longest sides of the case enable it to fit snugly into a cast-aluminum display piece that resembles a tuning fork. A black, molded-phenolic base is grooved and slotted to accept the metal case-holder in horizontal or vertical position, for display versatility. *Plastic case and display attachment by Arrow Mfg. Co., West New York, N.J.*

# Ideas in Action

## Product-hugging shrink film upgrades sales appeal

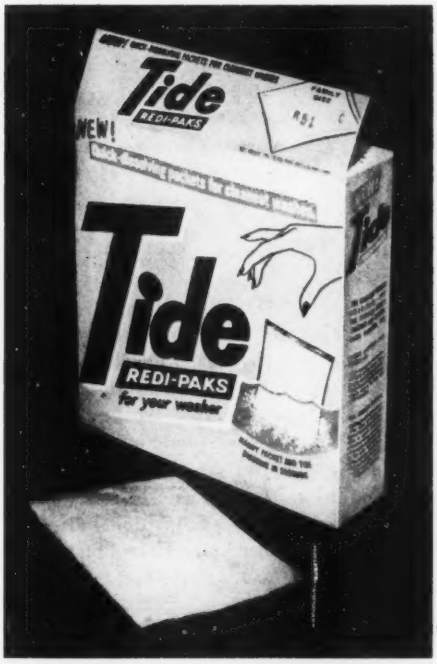
Irradiated, biaxially oriented polyethylene film—a material whose properties include rapid, smooth shrinkability as well as strength and sparkling clarity—is being used as a product-hugging overwrap for tray-packaged salt-and-pepper dispenser sets by Morris Plastics Corp., New York. The company credits this new product's sales success in large measure to the merchandising appeal afforded by the skin-tight shrink film, which is adaptable to a broad variety of packaging applications, including wrapping and "deal" combinations.

In Morris Plastics' packaging operation, the tray-packed salt-and-pepper set is first overwrapped with the shrinkable 1-mil polyethylene. Film ends (overlapped at the bottom of the tray) then are heat sealed and passed over a cooling plate. Finally, the overwrapped and sealed package is conveyed through a heat tunnel, where temperature of 210-225 deg. F. immediately shrinks the film, without wrinkling or other distortion, to half its original size. *Shrinkable polyethylene film and wrap-seal-shrink equipment by W. R. Grace's Cryovac Co. Div., Cambridge 40, Mass. Printed paperboard tray package by Ideal Mounting & Finishing Co., 44-01 11th St., Long Island City 1.*

## Paperboard-plastic folder prevents loss of tiny parts

Continuing developments in product-component miniaturization, particularly by the electronics industry, have raised some ticklish packaging problems. These tiny, often costly items must be protected against damage and loss, and also must be kept with specification sheets required to describe their performance characteristics. A compact paperboard-and-plastics "booklet" package which suits these demands at reportedly low unit cost has been developed by General Electric for transistors and other electronic parts.

GE's new package is a stiff, one-piece paperboard folder, one end of which is folded over, glued and die cut to form a 13-slot compartment. This compartment accepts a foamed-polyethylene tray with 13 nests (each holding one or two transistors) that align with the slots above. A strip of clear cellulose acetate, inserted above the foamed-plastic tray, holds the products securely in place. Specification sheets are placed in the left half of the "booklet," which, when folded at its center line, becomes a convenient, easy-to-store package. *Package assembly by Voss Litho Co., 4004 New Court, Syracuse, using Dow Chemical's polyethylene foam and Eastman Kodak's cellulose acetate.*




## Tide water-soluble pouches

It looks as though the long-anticipated volume application of water-soluble-film pouch packaging by the nation's major detergent manufacturers is at hand. Already on the market in at least one city (Jacksonville, Fla.) is Procter & Gamble's Tide in unit-of-use pouches that appear to be made of polyvinyl alcohol film. Colgate-Palmolive and Lever Bros. also are reported to be test-marketing powdered detergent in water-soluble PVA pouches.

The unit pouches for Tide (dubbed "Redi-Paks" by P&G) are marketed in a moistureproof wax-laminated tuck-top carton that holds eight packets. Although basic brand identification is the same as that for conventional Tide, contrasting-color copy and illustrations on all six panels call attention to the convenience (no measuring, no skin contact) and economy (each pouch contains enough detergent for a single washload) of the water-soluble film packages.

An examination of the Tide unit pouches indicates that excess air has been removed during the filling operation. This apparently makes it easier to load the flat pouches into cartons and also enables them to sink more quickly when tossed into wash water, for faster dissolution.

**SUCCESS STORY** NO. 1 OF A SERIES

# QWIP WHIPPED CREAM

*Qwip has overcome many difficulties to become the third largest aerosol whipped topping and the only one with distribution in 32 foreign countries—thanks to a unique and exacting new system of packaging that sterilizes real cream for longer storage life. The product's package is a prize specimen of the can-making art.*

Qwip, the aerosol whipped cream marketed around the world by the Avoset Co., Oakland, Calif. (105 employees), is new proof of an old marketing fact of life that some manufacturers overlook at their peril: Sales success often depends as much on the packaging as it does on the product.

Qwip started 10 years ago with a unique claim to fame, based on an unusual packaging procedure. It was the first—and so far is the only—pushbutton whipped real cream packaged in a sterile state. (Competitors are either nonsterile real cream, with limited shipping radius and shelf life, or vegetable products.) Qwip required a sterile packaging operation as exacting as that used for sterile drugs. The advantage: The product could be shipped from a single plant in California to the far corners of the earth, with no fear of spoiling.

But this was a tough market that Qwip entered, dominated by a half-dozen brands that already had full national distribution through scores of regional processing plants, supported by heavy national advertising. What would eventually be an asset at first was a liability: Working from a single, expensive packaging plant, Qwip had to expand slowly and it was several years before its distribution was able to penetrate beyond the Western states.

Nevertheless, demand grew faster than Qwip could supply it. Then came a second lesson in packaging. Sales dipped suddenly over a two-year period, until analysis showed that the package itself was lacking in sales appeal—that it failed to connote the quality of the product and was, in fact, being outshown by its more brilliant rivals.

Today, with a change to a can which is regarded as an unrivaled achievement in metal lithography (it was judged the best aerosol package in America in 1959), with the mouth-watering realism of the strawberries and cream that tumble over the gleaming white can from top to bottom, Qwip has piled a 7% sales gain in 1960 on top of an 11% step-up in 1959—and, even without full national distribution, is now ranked as the third largest seller in the United States, not to mention the 32 other countries from Canada to the Congo to which

**MODERN PACKAGING**

*THIS MONTH'S COVER compares the realism of lithographed aerosol-can labeling with the actual product as it is typically applied to fresh strawberries. Circling can in the background is a section of pre-lithographed tinplate from which shoulders are stamped and drawn.*

it has brought a striking example of American packaging progress. This is, indeed, a *Success Story*.

The story reflects a company acceptance of the need for occasional change and a willingness to profit from its mistakes.

Qwip grew out of a company that dates back to 1917 in the production of milk sugar and other specialty dairy products, particularly sterilized cream, in which it was a pioneer. The "quick whip" (from which came the diminutive name "Qwip") is its only aerosol product.

For eight years Qwip was packaged in a dark blue container with prominent white areas and capped by a red plastic dispensing unit that had to be removed by the consumer so a safety "leg" on the skirt of this release mechanism could be broken off to permit use. The dispenser also could be washed between usages, a convenience the company thought necessary and desirable because of Qwip's long life. However, like so many ideas about what might occur in the market place, this theory proved incorrect when tested against consumer preferences. Housewives, the company found, wanted a release mechanism like that on other aerosol toppings.

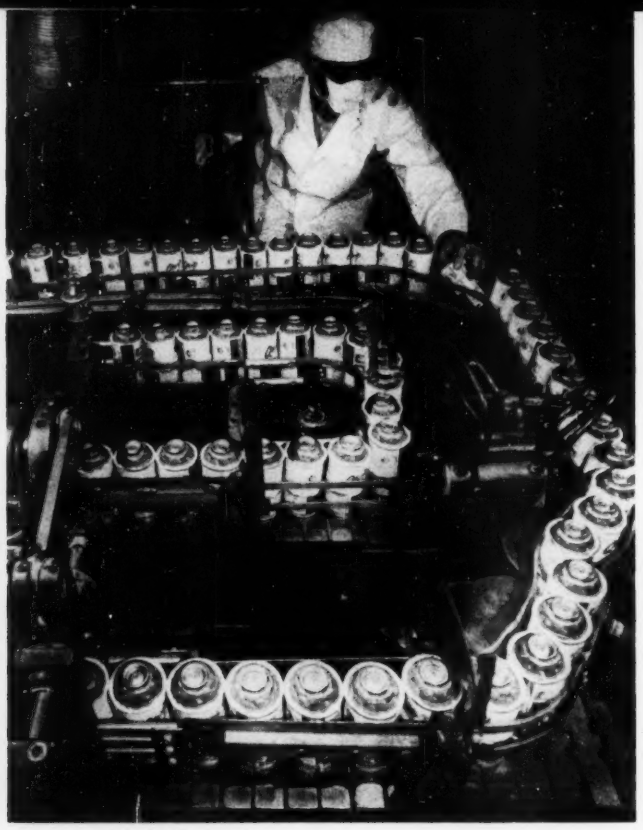
It was just prior to this that Qwip's sales had slipped when one of the country's largest packagers introduced a competitive vegetable-oil product at lower price and an established competitor enlarged the size of his can to sell for the same price.

These developments sparked a whole new packaging program at Avoset. Its advertising agency designed the new predominantly white, red and blue container and Avoset engineers created a new capped dispenser that would function with Qwip's stainless-steel valve and fit the company's sterilization process and packaging techniques.

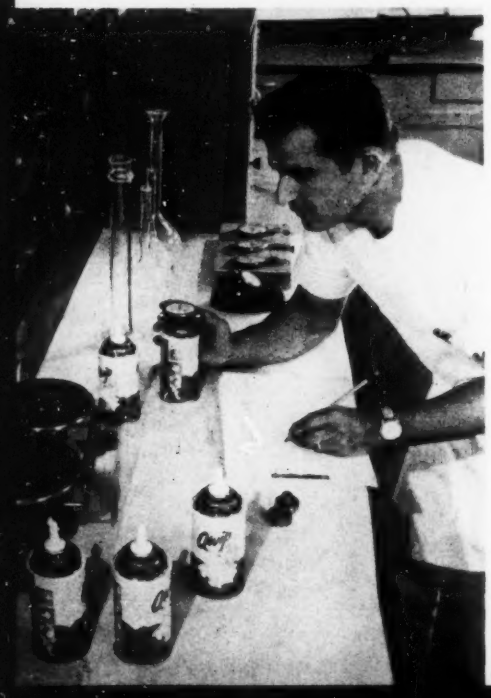
The new release mechanism is a flexible tube-like unit of white polyethylene that, unlike competitors', is separate from the valve. When the can is inverted by the user and finger pressure is applied against the side of the tube, a pin activates the valve and releases cream until the finger is removed. The valve is self-sealing to preserve sterility. With these packaging improvements, the sales upturn

**Dramatic labeling** *distinguishes lithographed metal body and shoulder of Qwip's aerosol container. Lower photograph shows how rich, red strawberries encircle can; also three small, full-color illustrations on side panel suggesting use of this whipped cream on strawberry shortcake, pumpkin pie and gelatine desserts. Upper photo depicts strawberries mounded around the can's "cone," a triumph in can making, because true dimensions are drawn from distorted flat printing.*

**Masked operators** *only are permitted in Avoset's sterile packaging room. Here, operator inspects Qwip cans passing in file to the filler.*



**Mechanical shaking** *at this point causes the propellant to mix quickly with product to permit addition of more nitrous oxide.*



**Quality control** *checks both product and package. Here, a technician verifies aerosol pressure with a hand gauge.*

that is still under way started for Qwip.

The illustration of strawberries on the shoulder of Qwip's container is said to be unique in aerosols, although some cans have carried copy there. The design is distorted on the flat plate so that when it is distended through stamping, the fruit will be correctly proportioned on the finished "cone."

This package won the 1959 Grand Award of the Chemical Specialties Mfrs. Assn., the trade group of the aerosol industry.

The sterile filling operation, borrowing from drug-industry techniques, represents a most remarkable achievement.

At Avoset's Gustine, Calif., plant, Qwip is flash sterilized on equipment, designed by Avoset, that heats the product to an extremely high temperature for a fraction of a second without appreciably altering the physical or chemical characteristics of the cream or its flavor. Similarly, both the cans and the valves (the latter also made by Avoset) are sterilized on Avoset-designed equipment and aseptically filled on filling machines also designed by Avoset.

The packaging room itself is pressurized and irradiated by ultraviolet lamps. Operators wear surgical masks and clothing that is presterilized. The valve is automatically applied to the can and swedged before being charged with the propellant.

In a "finished-packaging" area, which is nonsterilized, the release mechanism is affixed and the cap applied automatically before case packing, 24 cans to a case. Cans are refrigerated in a warehouse for at least two weeks before shipment.

During this period, a sample can is withdrawn from each 10th case for bacteriological testing. If a sample is found to be nonsterile, a system of statistical analysis determines what portion of that particular batch must be rejected.

While refrigeration is recommended, the product, once proved sterile, will keep indefinitely at temperatures up to 55 deg. F. This is not true of other real-cream aerosols, which may develop off-taste if kept too long even in the home refrigerator. The Qwip can label says "Qwip is the only real cream that keeps!"

Qwip's highly automated 15-man line turns out 160 cans per minute, with only one major variation: Cans destined for overseas foreign-language countries are paper labeled with copy in the appropriate tongue accompanying Qwip's standard logotype and artwork.

Evidence of the company's readiness to change is its current investigation of the potential in aluminum aerosols, representing perhaps its next step in documenting the theory that no matter how good the product, there's promise of greater success in a better package.

SUPPLIES AND SERVICES: Label design by Honig, Cooper & Harrington, 1275 Columbus Ave., San Francisco 11, and Jerry Wright, Oakland, Calif. Can by American Can, 100 Park Ave., New York 17. Polyethylene release mechanism and cap by Owens-Illinois' Closure & Plastics Div., Toledo 1. Nitrous oxide propellant by Air Reduction Co.'s Ohio Chemical Pacific Co., 155 E. 23 St., New York 17.

# Special appeals

*New Jewish packages keep tradition, yet have contemporary look*

Can a package maintain a traditional look and still be modern? The answer to this question is sometimes critical for packagers who find remunerative business in catering to restrictions imposed by religious customs, such as Jewish dietary laws.

The evolution of a series of successful packages for Barton's line of Jewish confections provides an interesting example to show that contemporary design can be valid even in appealing to what is reportedly one of the most conservative of markets.

In metropolitan New York, an estimated 10,000,000 packages of candies and chocolate made in compliance with dietary laws are sold each year with Jewish package design doing the job.

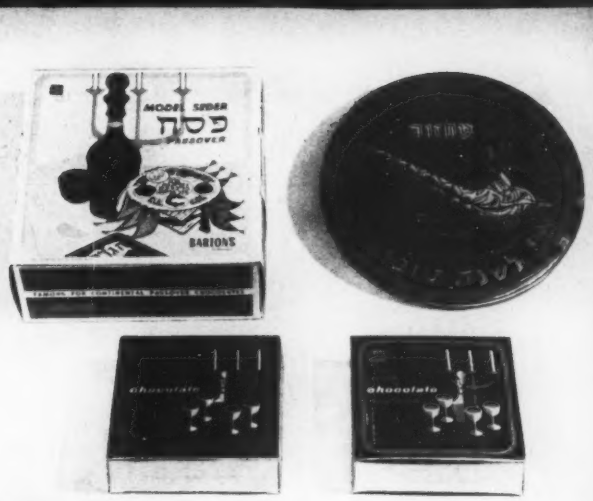
Barton's (750 employees; gross sales $10,000,000) enjoys a substantial portion of this business, especially because of its careful regard for package design to conform with religious beliefs and tastes.

The effect of this has been to devise packages to look like something that has forgotten to change with the times, even though designed yesterday.

A Dutch designer, now with offices in this country, who was commissioned to redesign Barton's packages (not just the Jewish items, but the whole line) reasoned that this did not necessarily have to be so. Actually, a design could express tradition, yet be modern. After making several *new* designs that had a definite "backward" look, he obtained Barton's approval to go ahead with some new ideas, but "to proceed slowly."

The group photos on this page show the evolution. Group I illustrates packages which, designed during the past year and now in the Barton shops, look as though they could have been designed years ago. Group II reveals the first step forward to see what consumer reaction would be. The same ritualistic symbols are there, but interpreted with contemporary feeling. Sales continued to go up so markedly that Barton's felt justified in letting the designer go still farther toward present-day graphic concepts. From this experiment, Group III has become the bellwether today for an entire shift in thinking with respect to the Jewish packaging.

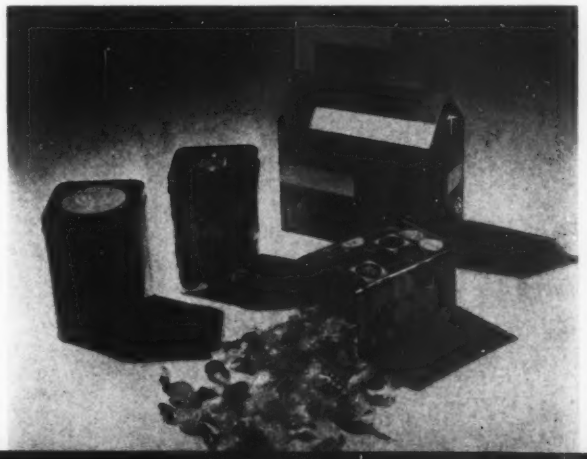
SUPPLIES AND SERVICES: Design program by Jaap Penraat Assoc., 315 Central Park W., New York 25.




**Group I.** *Present Barton packages, designed during the past year, look as though they were created years ago, to give traditional feeling that conservative Jewish customers want.*

**Group II.** *First step toward modern interpretation, yet the packages retain the traditional ritualistic symbols. Sales increase sold Barton on even more modern graphic concepts.*

**Group III.** *This basic design has become the bellwether for a shift in thinking with regard to religious packaging. These cans often come in carry pack as complimentary gift.*



**1** Nine pounds of meat gift packed in a "Treasure Chest" of gray corrugated, gold-color printed, was the novel holiday merchandising idea tried out by R. Wilke Meats, Inc. Meats were packed either frozen or fresh, ready for the grill. Quick acceptance reportedly has prompted its promotion for special occasions such as barbecues. Box, West Virginia Pulp & Paper's Hinde & Dauch Div., Sandusky, O.

**2** Another instance of the trend to decorative private-mold shapes in glass jars for instant coffee is the new modified hourglass shape with concentric ribbing, top and bottom, for Duncan Coffee Co.'s Maryland Club Instant Coffee. A new twist cap with compound liner eliminates the use of usual inner seal which must be torn off when package is opened. Glass, Armstrong Cork, Lancaster, Pa. Cap, Continental Can's White Cap Co., Chicago. Foil label, Strathmore Press, Boston.

**3** A miniature burlap bag serves as a distinctive sampling kit for General Foods' Instant Yuban Coffee. It holds a 2-oz. jar of coffee and a redeemable coupon which extends out of the bag's opening. The bag is a scaled-down replica of the traditional burlap container used to ship green coffee beans and has a drawstring of sturdy twine for door-knob hanging. Bag, Chase Bag Co., New York.

**4** Northern Electric Co. gives electric blankets greater point-of-purchase impact by adopting new display boxes that coordinate the entire line, yet distinguish each brand by the color identification, logos and variations in box constructions. Typical is this pyramid-shaped box for Crestwood. The blanket, wrapped in printed polyethylene, extends through a center die-cut opening and is topped by a display header. Dual controls fit into die-cut openings at sides. Design, Will Johnson, Chicago.

**5** A foil-laminated paperboard hood fits over the top of the quart-sized milk carton of The Borden Co.'s "Ready Diet," a new 900-calorie weight-control product introduced in selected markets. The hood distinguishes this specialty product in the dairy case and gives the package a uniform appearance, whether flat- or gable-top cartons are used. It also holds a booklet explaining the diet. Design, Springmeyer Associates, New York. Hood, Edwin J. Schoettle Co., North Wales, Pa. Cartons, American Can, New York; Sealright, Fulton, N. Y.; E. G. Staude Mfg., Walled Lake, Mich.

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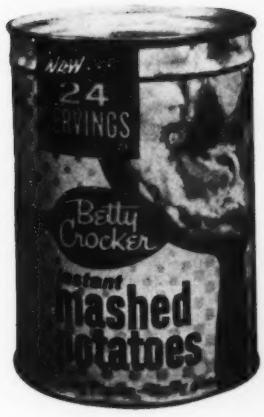

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# PACKAGING PAGEANT

**6** Now it's instant potatoes in a metal can. General Mills is test marketing Betty Crocker Instant Mashed Potatoes in a 21-oz. family-sized, key-opening, reclosable can that holds 24 servings, three times as much as the average carton and reported to save the consumer up to 20%. Lithography is in full color. Design, Lippincott & Margulies, New York. Can, American Can, New York.

**7** A "refrigerator tray" of high-impact polystyrene has a compartmented base and transparent slide cover through which individually foil-wrapped Almond Butter Crisp candies, made by Miss Saylor's Chocolates, Inc., are visible. A scroll-type, die-cut, pressure-sensitive label completes the package. Package, National Packaging Corp., Fort Wayne, Ind. Label, H. S. Crocker Co., San Bruno, Calif.

**8** Effective merchandising for Sterling Plastics Co.'s pencil sharpener is achieved by housing the unit in a double blister of clear acetate mounted on a combination pegboard and stand-up display card, a gold award winner in 1960 *Variety Store Merchandiser* competition. Package, Plastic Artisans, Port Chester, N. Y., using Joseph Davis Co. acetate.

**9** Appetite appeal on supermarket candy shelves is the aim of Powell's, Inc., in switching to full-color lithography for its Peanut Brittle and Peko Flakes. The carton features a photograph of the candy in a glass serving dish, with soft-focus background in high-keyed color. Cartons, KVP Sutherland Paper Co., Kalamazoo, Mich.

**10** Fashionette Hair Mist now comes in a large 14-oz. aerosol container that acts as a "supply system" for the purse-sized Fashionette "Petite." Special valves on each container enable transfer of the spray in a few seconds from the large to the purse-sized container. The small container is simply placed on top of the large one, the two exposed valves are firmly pressed together for the count of three, then removed. Aerosol containers, Aerosol Corp. of the South, Arlington, Tenn.

# Bleaches move

***Development of large, jug-type, liquid-holding containers formed from high-density polyethylene marks a significant new phase of the blow-molders' sweep into big-volume household cleansers and chemicals***

Scrambling for market dominance, both major and minor bleach companies are now tooling up for a switch from traditional glass bottles for their liquid sodium hypochlorite whitener to new and strikingly different blow-molded containers made from high-density polyethylene. The goals are major savings in shipping weight and assured safety from breakage—the latter a strong consumer sales point that is expected to make a big hit with housewives.

This is the long-predicted move of high-density polyethylene bottles into the big bleach market, following their initial sweep of the liquid-detergent field. This type of polyethylene is ideally suited to sodium hypochlorite, which would be a problem for most packaging materials other than glass.

So far, at least three companies—Roman Cleanser Co., Detroit; The Clorox Co., Oakland, Calif., and Tops Chemical Co., Duarte, Calif.—have plastic bottles in one or more test markets for sizes ranging from quarts to gallons. There are rumors that Purex, another giant of the bleach industry, is also quietly market testing a plastic jug in its home area of Southern California.

In addition to durability, the new plastic bottles offer further advantages in freedom of design and the opportunity of providing specific consumer convenience. For instance, two of the new containers (Clorox and Roman) are formed with large "water-jug" handles that give a sure grip on the bottle and expedite pouring. Larger sizes of the Tops bottle

**Versatility of design** *in polyethylene is highlighted by these two plastic bottles for Tops and Roman bleach. Blow molded in square form with dual finger rings at the neck, Tops bottle (left) saves on shipping and storage space. Slim, round Roman bottle (right) has full-sized "pitcher" handle for ease of handling.*

PHOTO COURTESY W. R. GRACE.

# to plastics

**Easy to pour** *and unbreakable. These are salient features of such new plastic jugs for liquid bleach as this recently introduced Clorox container. The opaque white bottle comes in quart, half gallon and gallon sizes; both of the larger bottles have the large, four-finger handle.*

are formed with a square shape that saves space. This container has a finger loop on each side of the pour spout for ease of handling.

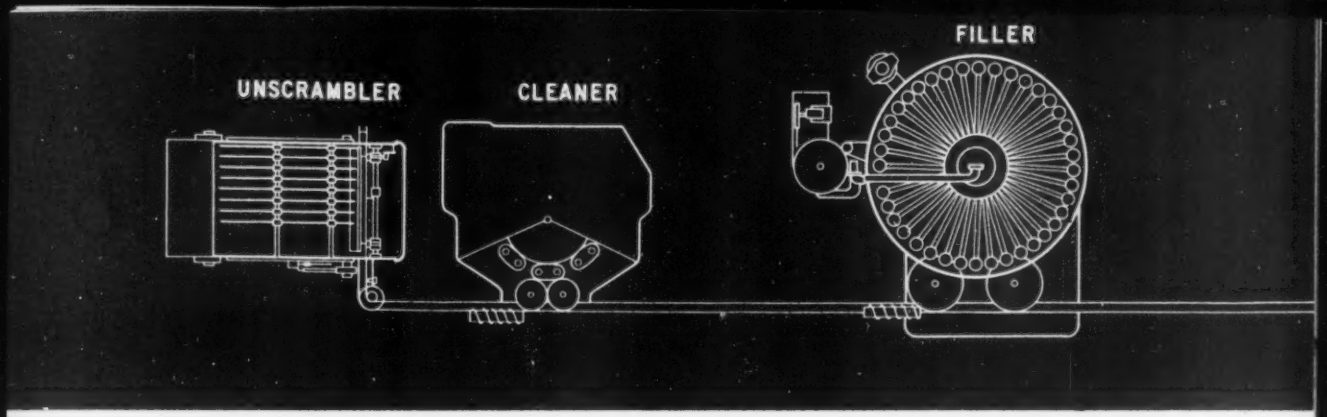
Weight reduction is an important economic advantage. One manufacturer reports that six of the filled gallon-sized plastic bottles weigh only 58 lbs. per case—a saving of 15 lbs. per case over the company's previously used package.

All of the polyethylene bottles which are presently on the market employ colorfully printed paper labels for brand identification and two of the three—Roman and Tops—utilize polystyrene caps, thus creating all-plastic packages that virtually defy attack by the corrosive products. The caps are generally vented to permit the escape of free chlorine gas, which is evolved slowly from the bleach during storage, and each of the containers is reported to have the added advantage of no-drip features being built into the pouring lip.

Polyethylene containers for both the Roman and the Clorox bleaches are opaque white, while the Tops bottle is molded from yellow polyethylene.

Preliminary reports from consumers give top score to the plastic containers for convenience, safety and appearance, and it seems that, once again, plastics have established strong penetration in a field where their functional properties excel.

SUPPLIES AND SERVICES: Clorox bottle by Plax Corp., Hartford, Conn., and Owens-Illinois Glass, Toledo 1; caps by Owens-Illinois. Roman Cleanser bottle by Plas-Tainer Corp., Sub. of Hoover Ball Bearing Co., Saline, Mich.; caps by Armstrong Cork, Lancaster, Pa. Tops bottle by Plastics Div., Hydrocarbon Chemicals, Keyport, N. J.




# Bottling whiskey 50% faster

**Unscrambler** *handles two cases at a time and simultaneously pushes eight bottles onto take-away conveyor. Reciprocating arm (center) holds the bottles under control during positioning.*

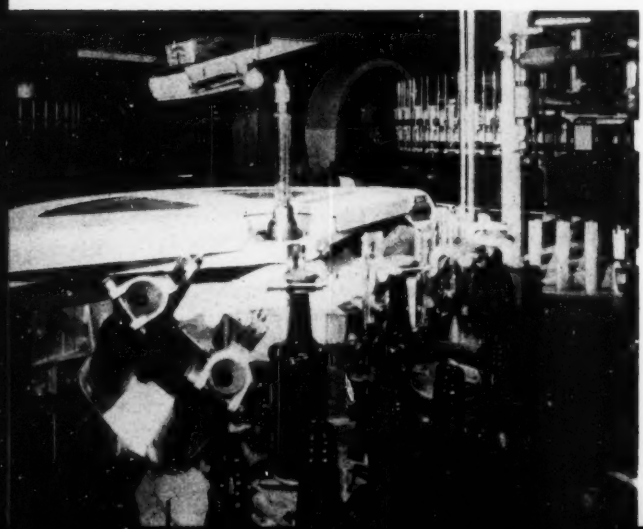
In contrast with the patience shown by distillers during the aging of their fine whiskies, there is a noticeable hurry when it comes to bottling these spirituous products. Since World War II, the large liquor bottlers have progressed to increasingly faster, fully integrated, automatic packaging lines that are virtually setting the pace for bottling equipment in the entire packaging field.

Perhaps the most advanced achievement is a high-speed synchronous line at the Lawrenceburg, Ind., plant of Joseph E. Seagram & Sons, Inc., that is rated at 200 Seven Crown fifths per minute, providing a 50% rise in packaging speed at this big plant. Now being run in at 180 bottles per minute, this bottling facility also achieves a 20% rise in outut per man-hour. From unscrambler to automatic caser, the nine mechanical elements on the line are either brand new or have undergone major revisions in construction to gain the higher speed. They afford some interesting innovations in packaging techniques applicable to bottlers of any liquid product.

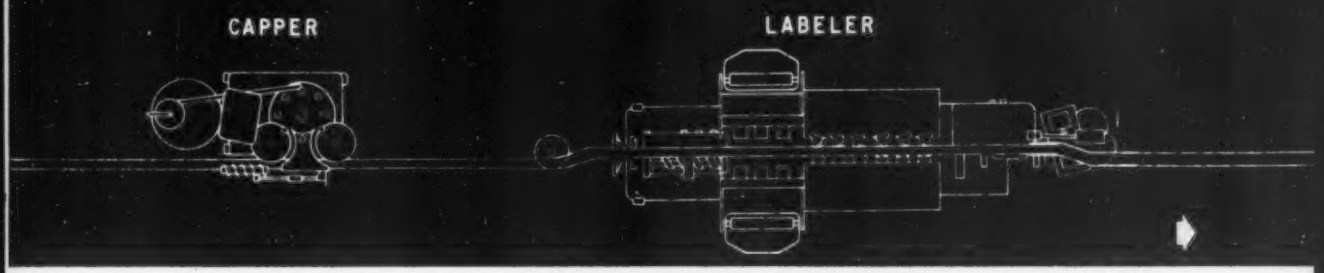
Several general improvements in equipment and in drive and control mechanisms are of top interest.

Whenever possible, beefed-up rotary, continuous-motion machines have been substituted for smaller rotary or intermittent-motion units. Where intermittent action is unavoidable (as in the unscrambler and caser) or high-speed rotary action necessitates an excessively large turntable (as in the cleaner), the bottles are handled in gangs to boost speed.

With the exception of the unscrambler and case



**Cleaner** *employs dual-bottle stations to speed output. Stations swivel through barrel-cam action over cammed air nozzles that change to suction in the last moments of the cleaning cycle.*



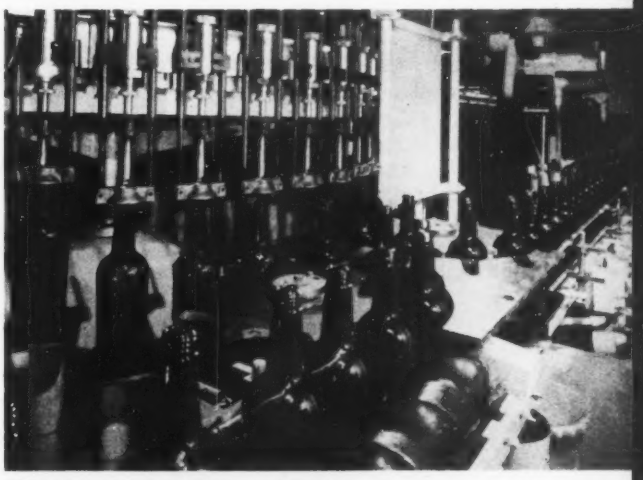

SCHEMATIC OF SEAGRAM LINE CONTINUED ON FOLLOWING PAGE

***Seagram's new synchronized line sets a new high standard for the rapidly accelerating distilling industry and incorporates advanced features of interest to all bottle packagers***

packer, which have individual motors, the line operates from two main drives, thus centralizing packaging control and synchronizing operation of the machinery and movement of the glass bottles. One 10-h.p. motor, turning two jack shafts, drives the bottle chain, cleaner, filler and capper. It is equipped with a variable-resistance starter that insures gradual acceleration of the line during starts.

The second drive, a 5-h.p. motor, operates the labeler, stamp machine and a bottle spotter for separating the filled and sealed bottles into two different lines on the inspection table.

This latter drive is a two-speed mechanism that is necessary to assure a constant supply of bottles to the straight-line, continuous-motion labeler. If the bottle supply is reduced, the drive mechanism shifts into "low gear," slowing down the labeler and stamp machine. If the backlog becomes larger, the machine speeds up; if it becomes too great, an automatic switch stops the feed of bottles to the filling and capping portion of the line until the labeler catches up. Timing of the bottles between the labeler and the stamp machine is automatically maintained by two synchronized dog chains—also driven from the centralized drive—which prevent both glass-to-glass contact and scuffing of the wet labels.

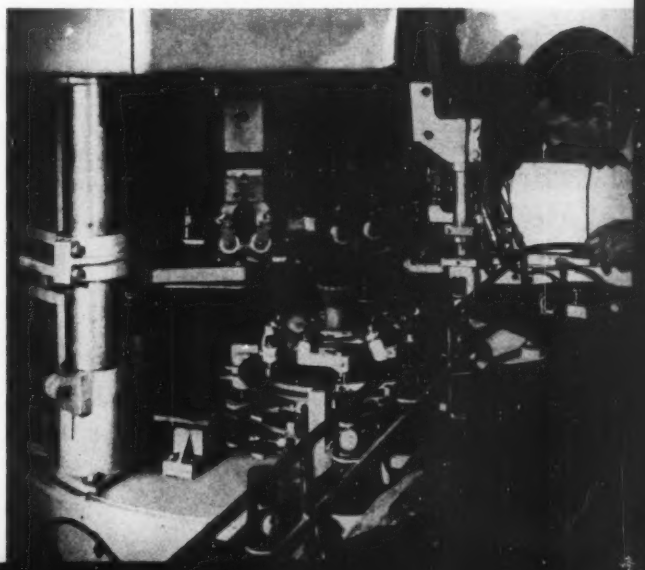


**Filler** *has 40 heads and a special vernier-actuated cam rail that can be adjusted to control fill while machine is running.*

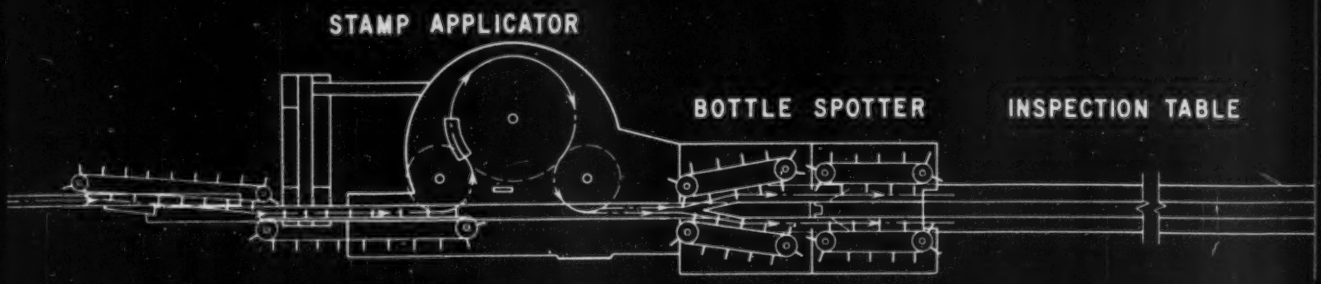
**New units**

Several innovations in specific pieces of equipment are also of interest to other packagers.

The unscrambler is of a new design which permits



**Stamp applicator** *in-feed swings bottles onto turret, where they are spotted by friction device. Strip stamps, vacuum fed from magazine (right), are smoothed down over bottles by nylon rollers (center).*



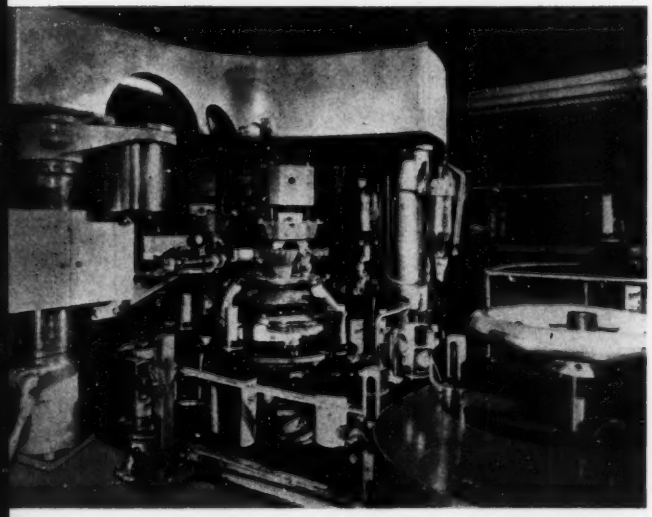

simultaneous dumping of two cases of glass. Then, instead of converging the glass into single file, as is the case with most such units, this machine feeds eight lanes forward with an intermittent motion that places eight bottles at a time on a right-angle take-away conveyor. A reciprocating arm holds the bottles under complete control until they are picked up by the bottle conveyor.

The nine-station rotary cleaner, which handles 18 bottles at a time, makes use of a smooth-acting barrel-cam mechanism to spin the bottles upside down for air cleaning. Indexed by a helix and star device, the bottles are clamped in pairs on each station. After inverting, air nozzles are introduced well into the neck of each bottle and a strong air blast flushes the containers through a horizontal arc of 136 deg. This inverted position is continued as the nozzles are withdrawn—thus allowing any large particles to fall from the unobstructed necks. The bottles are then returned to an upright position on the main conveyor belt.

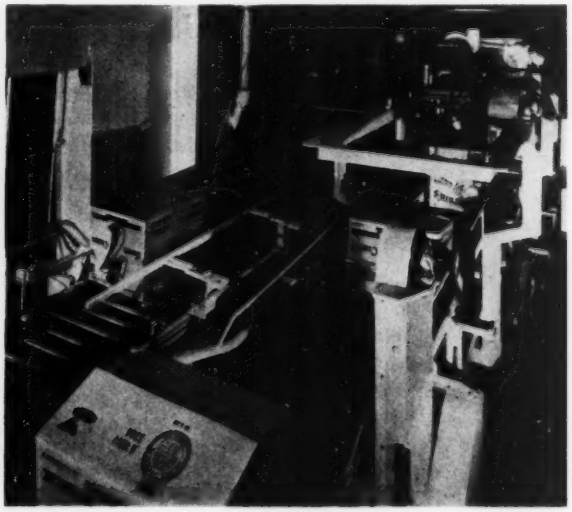
Of particular importance in a high-speed filling operation is the ability to adjust fill height of the bottles without stopping the machine. This is accomplished on a new 40-head rotary filler with a dip-and-raise section in the cam-operated filling cycle. As the bottles move around the rotary filling turret, each bottle platform is dropped slightly by cam action and overfilled. The platform is then cammed up and the excess liquor is accurately withdrawn. A vernier adjustment on the elevating-cam rail permits these accurate adjustments in fill to be made while the machine is running.

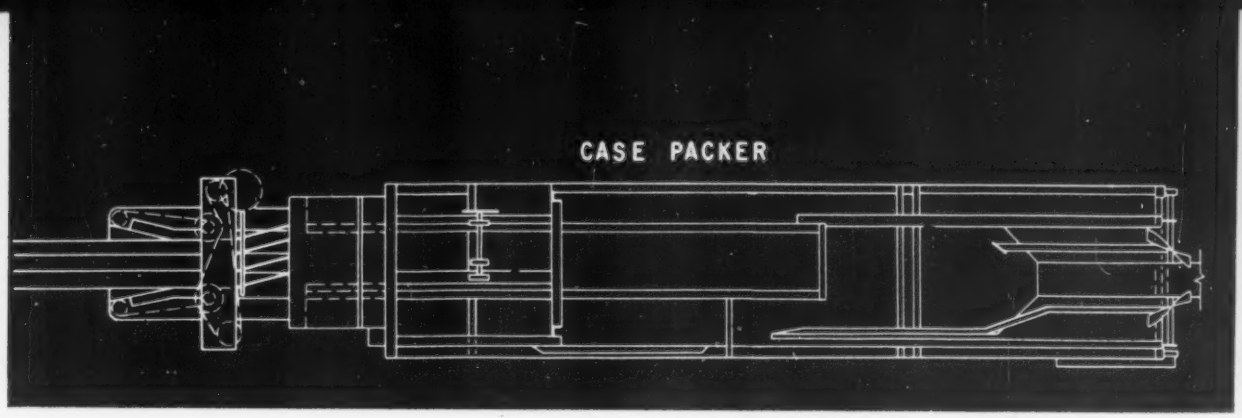
Both the rotary capping and straight-line labeling machines are fairly standard in action, though (1) the size of the capping turret has been increased

**Bottle spotter** *located under wheel at right gets assist in positioning containers in two rows from discharge turret of stamp machine (center), which has plungers between alternate gripper arms that stagger the bottles on the take-away conveyor.*



**Case packer** *receives closed shippers from uncasing operation (left rear) on upper level and opens them by means of flying arms, plows and a suction device (rear right.) Government panels on the shipping cases all face in the same direction for later imprinting.*






to eight heads (from six) to meet production speed and (2) the labeler is interlocked electrically with the rest of the new line to maintain a full load, since the dual, three-station labeling heads are designed to feed labels either all together or not at all; a skip in the line would waste labels.

From the moment the bottles enter the worm feed on the labeler until they are finally discharged from the stamper and bottle spotter, they are held under individual control. Between the labeler and stamp machine, this is accomplished with vertically mounted lug or dog chains. Entering the new rotary stamp-applicating unit, the bottles are handled at this stage by a gripper turret.

The stamp machine has three other innovations that make for high-speed operation:

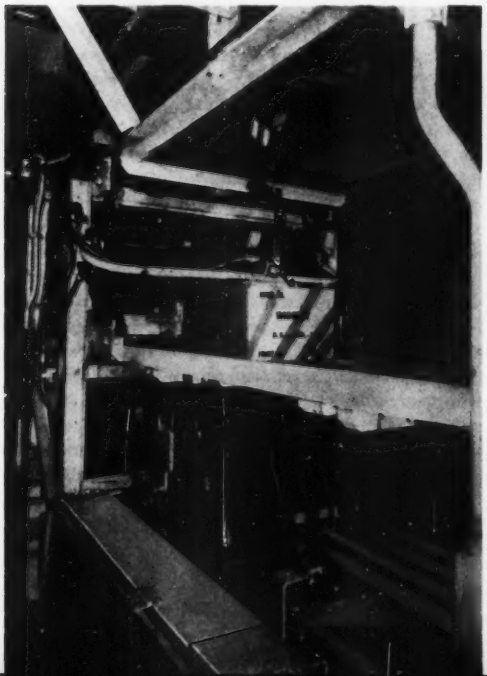
*First,* the bottles are spotted on the main turntable by a friction device that spins the containers until the bottle lug contacts a stop on the turntable.

*Second,* strip tax stamps are magazine fed and picked up by a high-speed vacuum wheel and are transferred to carriages that are mounted on the turntable. Silicone-rubber rollers then smooth the stamps down over the cap and neck of the bottle.

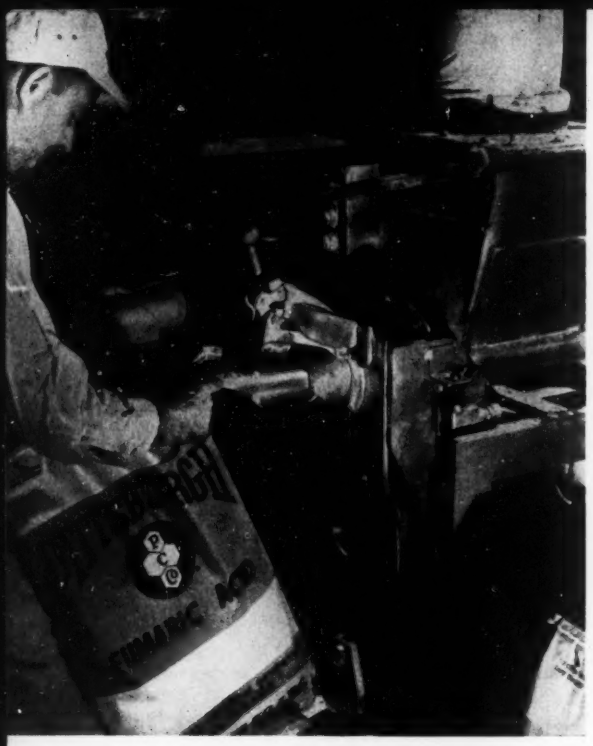
*Third,* at the exit of this machine, a transfer turret with cammed gripper arms provides pre-spotting action. Plungers mounted between alternate pairs of gripper arms push [*Continued on page 168*]

SUPPLIES AND SERVICES: Container feeder, cleaner, "Series C" filler and capper by Pneumatic Scale Corp., Quincy 71, Mass. "World Super CM" labeler by Economic Machinery Co., Worcester 3, Mass. "Model B" stamp applicator and bottle spotter by Sperry Rand's Wright Machinery Co., Durham, N. C. Automatic case packer by Climax Products Div., Lodge & Shipley, Cincinnati, O.

**Caser** *loads bottles upward through the bottom of the shippers by means of four arms (lower right), which travel in a rectangular path. Automatic interlocks prevent damage from jams, detect cases with missing bottles.*



**Fifths** *of Seven Crown handled at 180 per minute in nine successive steps on Seagram's new line. Note recessed lugs at the base of the bottle (right) that facilitate spotting of the container for labeling and stamping of Government seal.*



## Service with a saving

This is the story of how an industrial packager's regard for improvement of customer services led to important savings in container cost as well. The packager is Pittsburgh Chemical Co.'s Industrial Chemicals Div., whose products include fumaric acid—a chemical intermediate of flour-like consistency, used chiefly in the plastics and paint industries. The company formerly supplied this product solely in 250-lb. quantities, packaged in non-returnable fibre drums.

In the interest of upgraded user convenience, the division recently decided to supplement the bulky drum with a smaller package unit that would provide easier in-plant palletizing, warehousing and handling at the point of use. With these goals in mind, it adopted a tough, sewn-top multiwall (five-ply) 50-lb. kraft bag. User-company response was immediate and enthusiastic, says Pittsburgh Chemical. As a bonus, the bag's lower cost is passed along to customers in the form of a ½-cent-per-pound price cut. The bag is filled on a semi-automatic valve packer that can be adjusted to fill the drum as well. *Multiwall paper bags by St. Regis Paper Co., 150 E. 42 St., New York 17, and Raymond Bag Corp., Middletown, O. Filler by H. L. Stoker Co., Claremont, Calif.*

# COST CUTTERS

## What price protection?

Are you spending more than is necessary for product protection? This question set the package-engineering force of The Wm. S. Merrell Co., Cincinnati, on an investigation that so far is said to have reduced by 45% the cost of screw caps for bottled proprietary and prescription pharmaceuticals. The continuing program is expected to achieve additional economies in the near future, according to company packaging engineer W. E. Johnson.

For some years, Merrell had used molded phenolic caps exclusively on the glass bottles for its broad variety of liquid drug-store products. The plastic's relative inertness was a major determining factor in their application, the packager points out. However, in the constant search for more economical packaging procedures, stability tests were run using lower-cost coated tinplate screw caps. These tests, says Mr. Johnson, proved that metal closures were entirely satisfactory for many products. At present, some 60% of Merrell's liquid-pharmaceuticals line is marketed in metal-capped bottles, including the company's best-selling over-the-counter specialties, Cepacol and Kolantyl Gel. *Metal caps by Phoenix Metal Cap Co., 2444 W. 16 St., Chicago 8.*

## A neater look, at 20% less

In the packaging of merchandise for self-selection rack display, attractive container appearance can go a long way toward clinching the sale. Empire Brushes, Inc., Port Chester, N. Y., reports that it has achieved just such sales-making appeal for a line of polyethylene-bagged brush kits via the adoption of a trio of semi-automatic stapling machines for sealing paperboard hang-up headers to bag tops. Mounted as a unit, the air-driven staplers can accommodate any of the 15 bag sizes in Empire's line, assuring accurate and positive staple placement every time. What's more, the company says, installation of the sealing mechanism has cut packaging cost 20% while speeding up stapling at least 30%.

In the packager's former header-applying operation, hand-operated staplers were used. Not only was this system slow, Empire reports, but it often resulted in poorly positioned or loosely applied staples, which in turn led to unattractive or unsalable packages. The company's new three-in-one stapling mechanism is fitted with a shut-off valve which permits simultaneous placement of either two or three wire staples, depending on bag size. *Model P-6 air-driven stapling machines by Bostitch, East Greenwich, R. I.*

## Versatile greaseproof cuts nut-packaging costs 33%

A double benefit—greater versatility in container design and a 33% cut in packaging cost—is reported by Royal Nut & Candy Co., Hoboken, since switching to a greaseproof paper-paperboard lamination as the bottom surface of its clear acetate telescoping box for salted nut meats. Royal's experience should be of interest to packagers of a wide variety of grease-containing products.

The company has used telescoping acetate boxes for years, capitalizing on the visual appeal offered by the clear plastic. Formerly, however, the containers were produced only in round style, with a die-cut lithographed metal bottom surface to guard against unsightly oil penetration.

According to Royal, the glue-laminated greaseproof paper and paperboard combination does an equally effective job of protection against oil penetration, at significantly lower cost. In addition, says the packager, inexpensive variations in box shape (such as the oval style illustrated) are possible because die costs for paperboard are considerably lower than for metal. *Box by Rodgers Packaging, 49 W. 32 St., New York, using Monsanto acetate. Greaseproof paper-paperboard lamination by Salwen Paper, 1 Rewe St., Brooklyn 11.*

**Flat blank** *beside finished packages shows how riser panel with punched hole is integral to one-piece construction. The header offers space for extra sales message, also adds container bulk to discourage pilferage.*

# Flip lid with header

***Ingeniously designed one-piece blank for Agrico plant-food package offers the advantage of convenient hinge-lid box with added merchandising feature of riser for pegboard hanging***

A solution for rack and pegboard merchandising of many small items is suggested by a flip-lid box construction made with a punched header integral to the one-piece carton blank.

Designed for Agrico plant foods by Harry A. McKee, in charge of products development and marketing, The American Agricultural Chemical Co., New York, in cooperation with a leading folding-box manufacturer, the new package attracted attention among the winners of the 1960 *Variety Store Merchandiser* packaging competition.

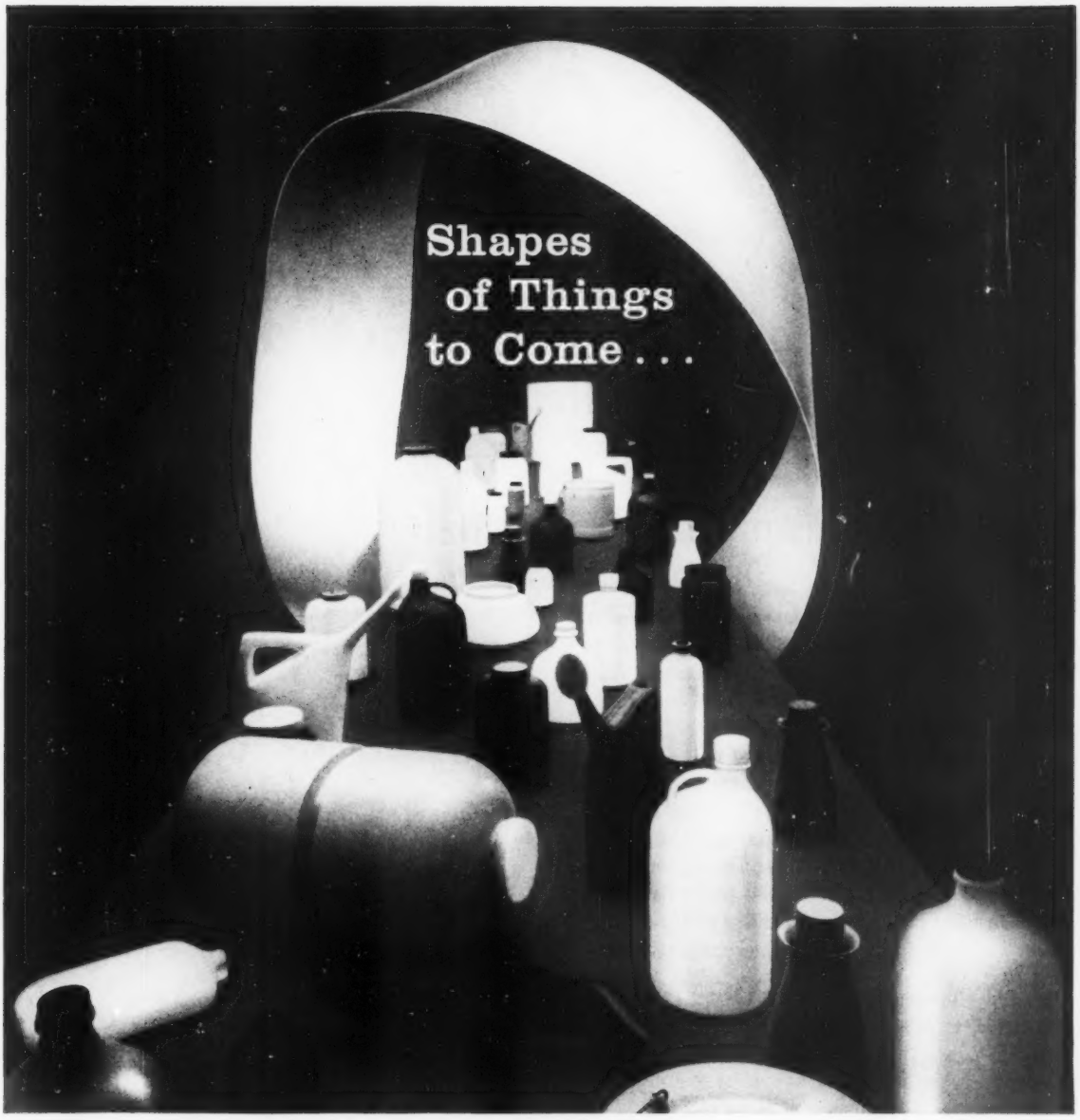
Made for Agrico of pre-printed, foil-laminated board, the construction differs from cigarette flip-lid boxes in that a folded-over back panel extends about 2½ in. above the tuck-in top flap, but the flipping lid operates in a similar manner by means of specially designed die cutting and scoring. A tamperproof closure is provided by several nicks in the die cut which must be broken by the consumer in order to raise the lid of the box.

The boxes hold four individual foil-laminated packets of the plant fertilizer and are made on conventional machinery for making folding boxes with one glued side seam. They are shipped knocked down to the user. The American Agricultural Chemical Co. forms and fills the boxes by hand, but mechanical equipment could be developed for the purpose if volume warrants, the company says.

The principal advantage is an economical package to hold several individual items that can be hung up for pegboard display. The punched header may also be convenient for the consumer to hang up in the home if the package is employed as a storage receptacle for holding the unused contents.

The blanks may be made of any type of board suitable for the product to be packaged. Suggested applications are for twin packs of photographic film, crayons, chalk, sewing supplies and notions, salad mixes, confections and many others.

SUPPLIES AND SERVICES: Cartons by Continental Can's Boxboard & Folding Carton Div., 530 Fifth Ave., New York 36.

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■ **Virtually eliminate broken packages . . . protect product quality.** New Avisco "T" Films offer superior durability under normal temperatures. And this superiority is even more pronounced at temperatures below freezing. What's more, "T" Films offer the same high standard of product protection as cellophane, and they print just as beautifully. "T" Films are also unmatched for high speed machine performance in all types of bag making, filling and overwrapping operations.

■ **Ideal in single-wall bag constructions . . . excellent choice for packaging a wide variety of products.** Hardware, textiles, paper products, pharmaceuticals, snack items, shelled and unshelled nuts, candies, cookies, dry beans, macaroni and rice, are a few

examples. In each case, Avisco "T" Films will result in total packaging economy. The same benefits also apply in bundling multiple units for redistribution.

■ **Two types of Avisco "T" Film are now available—both 450 gauge.** Avisco *T-69* Film is nitrocellulose coated. Avisco *T-79* Film is polymer resin coated. Both films provide superior strength, and yield 14,000 square inches per pound. Find out how they can serve your packaging requirements better. Phone or write for an appointment with our representative in your area or a selected cellophane converter specializing in your field.

AVISCO®

**AMERICAN VISCOSE CORPORATION,** FILM DIVISION, 1617 PENNSYLVANIA BLVD., PHILADELPHIA 3, PA.
SALES OFFICES ALSO LOCATED IN ATLANTA, BOSTON, CHICAGO, DALLAS, LOS ANGELES AND NEW YORK.

# Standards for extrusion coatings

*Methods now in use for checking and controlling such factors as bond strength, heat-seal strength, gauge and basis weight suggest an industry-wide approach to the problem.*

*By Benjamin Lechner[1] and William S. Bunte[2]*

Extrusion coating of polyethylene onto various substrates (cellophane, foil, polyester, paper) is a young and dynamic industry which in the past 15 years has become an important segment of the flexible-packaging industry. This technique was first developed in about 1946 and has advanced to the point where its products represent approximately $70 million a year. Further projections to 1965 forecast a possible increase of 100% and, in some items, the increase could be even sharper.

Because of the youth of the industry, quality-control standards have not yet been developed industry wide. With other packaging products, testing instruments and techniques can be borrowed from allied processes. However, extrusion coating of polyethylene requires its own peculiar testing instruments and methods of procedure.

Many extrusion coatings are used for packaging applications which make critical demands upon the films, as for example in flexible vacuum packages, boil-in-the-bag packages, sterilizable packages and protective packages requiring long shelf life.

In addition to the ultimate package itself being critical, there are more and more exacting demands being made by advances in the speed and accuracy of packaging machinery. To illustrate, we point to a pouch-making machine which runs polyethylene-coated cellophane at a speed of approximately 100 ft. per minute. It is not at all unusual for several different types of machines to form and fill packages at the rate of 100 per minute, at the same time synchronizing the packaging cycle to the printed message on the film. Therefore, in order to cope with the critical demands of the package itself and to insure machinability of films on high-speed packaging equipment, it is of vital importance that extrusion-coated films be produced on a consistently high and uniform quality level.

Certain protective properties of extrusion-coated films are "built in" by the selection of the type of

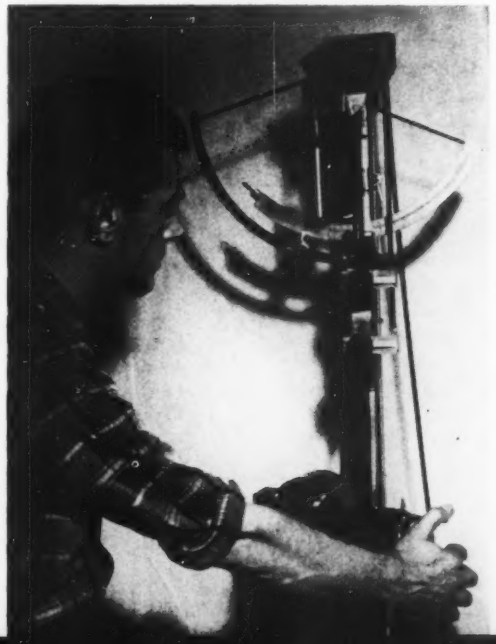


**Figure 1.** *Bond strength of a polyethylene coating is measured by peeling off a 1-in. sample on a Scott tester, Model X-5.*

[1] President and [2] Quality Control Manager, Print-A-Tube Co., Lassiter Div., Riegel Paper Corp., Paterson, N.J.

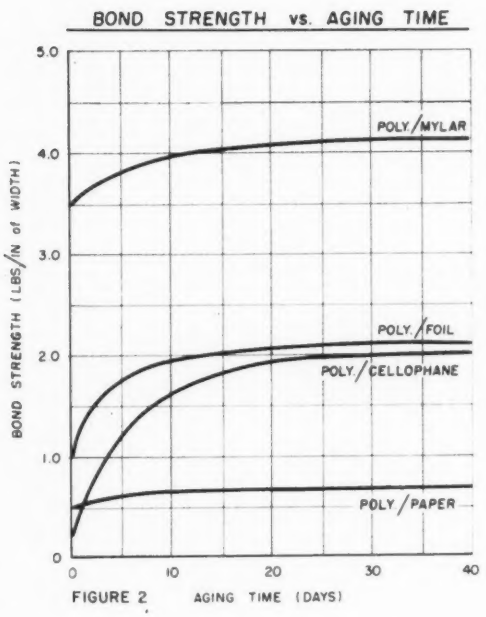



FIGURE 2

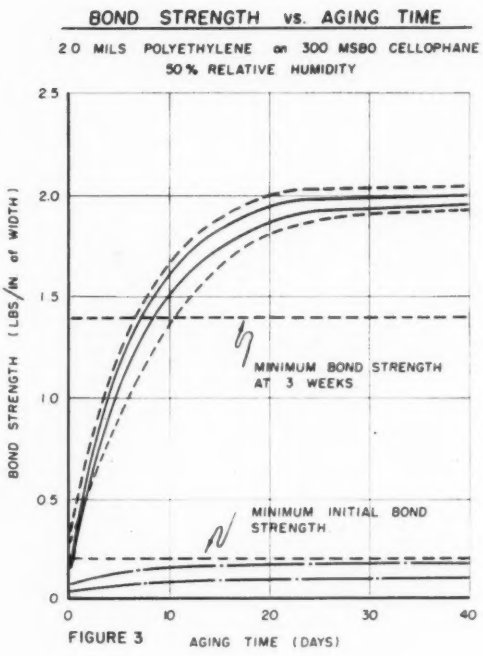



FIGURE 3

substrate and also by selection of the gauge and type of polyethylene to be used. These properties include water-vapor transmission, gas permeability, grease resistance, stiffness, strength (tensile, tear, bursting, etc.) and chemical resistance.

Although the nature of the substrate is not substantially changed during the extrusion-coating process, production variables will affect the gauge, the bond strength, the heat sealability and the appearance of the polyethylene coating, and changes in these factors could be extremely harmful with respect to the protective qualities of the film. Minimum standards of uniformity of polyethylene coating must be set to guarantee the proper protective qualities of the film that has been selected.

One company's approach to quality control in this field will be given with the hope that it may be used as a starting point in establishing industry-wide standards*. In obtaining the basic data required to set up quality standards, some interesting studies were made on the effects of aging and humidity on the physical properties of extrusion-coated films. These will also be discussed.

The chief properties which must be controlled by quality-control procedures during the manufacturing operation are bond strength, heat-seal strength, gauge and basis weight, and appearance. These observations and suggestions relate only to the extrusion coating of cellophane, polyester and foil combinations and the procedures are not particularly applicable to polyethylene-coated kraft paper.

**Bond strength**

The bond strength or adhesion of polyethylene to substrates can be measured by peeling 1-in.-wide samples on a Scott tester (Model X-5) at 12 in. per minute jaw separation. The force required for this stripping of one substrate from the other is the bond strength and is recorded in pounds per inch of width. It is important that the instrument for testing bond strength be of sufficient sensitivity to measure this properly in at least 0.1-lb. (or equivalent gram) increments. The scales of 0-2.0 lbs. and 0-10 lbs. on our Scott tester (Figure 1) worked very nicely for these measurements.

It has been known for some time that the bond strength of certain laminates increased somewhat on aging; however, the degree of this increase and the time required for ultimate bond to be reached was not known. A detailed study was made on this aging phenomenon with various laminates made under various operating conditions. In all cases it was found that the bond strength increased for a period of approximately three weeks and then leveled off to a constant value.

Since the bond of polyethylene to paper is almost entirely mechanical, there was very little increase in bond strength on aging. However, on polyethylene-foil laminates the bond doubled on aging and

* A Specifications Task Committee of the National Flexible Packaging Assn. is currently studying the problem of uniform quality requirements and specifications for the entire extrusion-coating industry, as well as other converted flexible packaging products.

on polyethylene-cellophane the bond increased up to 10 times in the three-week aging period. Polyethylene-polyester combinations start at a very high level of bond strength because of the primer used and, as a result, the percentage of increase of the bond on aging is lower.

The adhesion of polyethylene to smooth base stocks is a chemical-type bond rather than a mechanical one. The exact cause of this increase in bond strength with age on these smooth base stocks is not known, but it is suspected that it results partly from an oxidation of the two surfaces and a strain release of the polyethylene on aging. Figure 2 shows typical curves for the increase in bond strength with time for polyethylene-cellophane, polyethylene-foil, polyethylene-Mylar and polyethylene-paper combinations.

In order to be effective, quality-control tests must be performed immediately after the product is manufactured. This is necessary in order that adjustments may be made to correct the process in time to minimize or prevent the manufacture of defective product. The quality-control limits on bond strength are based on values obtained 15 min. after the material has been extrusion coated. In order to set these limits, it was necessary to run numerous bond strength-aging curves on each type of material, to be sure that the same type of curve was obtained under the normal operating variables. Bond values which were too low when the materials were tested immediately after extrusion coating did not become stronger on aging.

Using standard statistical quality-control procedures, bond limits have been set up for values obtained 15 min. after manufacture for each type of material, to insure that all film within these limits will age to the proper ultimate bond strength.

Figure 3 shows a family of bond strength-aging curves on one polyethylene-cellophane combination (2.0 mils polyethylene/300 MSBO cellophane) and illustrates a typical distribution of values on this type of laminate. Initial bond-strength values below 0.1 lb./in. did not improve on aging. Our minimum initial bond-strength limit of 0.2 lb./in. is also shown in Figure 2, with the tentative minimum bond-strength limit after three weeks' aging.

It was found that under very high humidity conditions the bond strength of polyethylene-cellophane did not age in the same manner as at normal humidities. Figure 4 shows the effect of various humidities on bond strength of polyethylene-cellophane (2.0 mils polyethylene/1.0 mil moistureproof cellophane). Laminates which have been weakened by very high humidity will, however, return to a good bond strength when placed in a low-humidity area for a period of only a few hours.

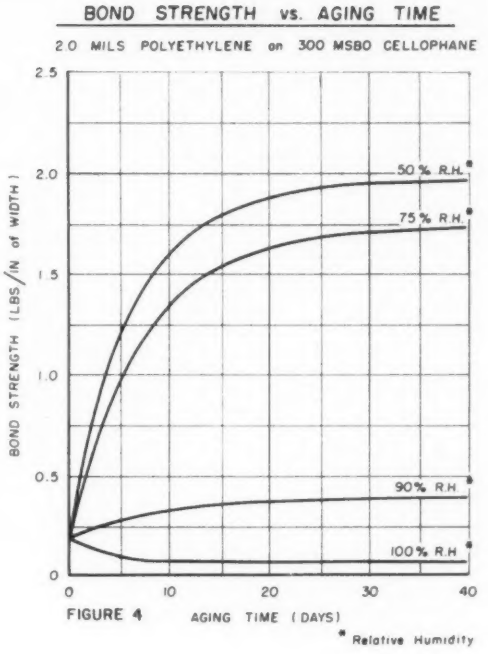


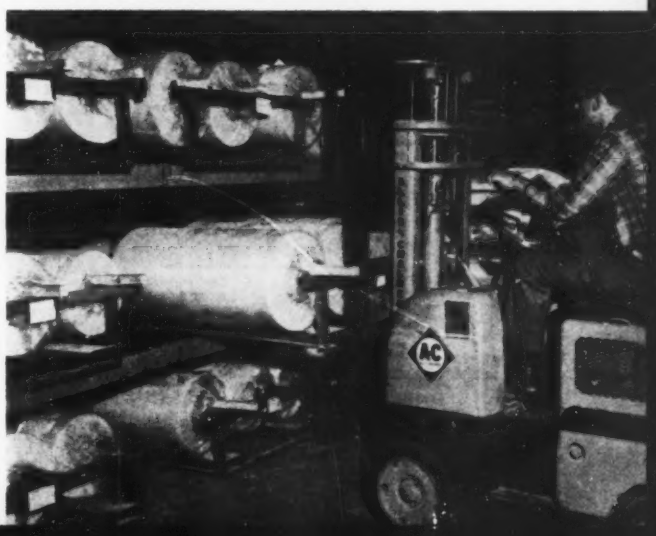
FIGURE 4

The normal aging curve can be obtained during periods of high humidity by wrapping the extrusion-coated rolls with a moistureproof film during the aging period (Figure 5). As a result of this observation, this is now done on all extrusion coatings at our company and the protective wrapper is not removed until the roll of film is actually ready to be used by the ultimate customer.

### Heat-seal strength

Seal strength can be measured by cutting a 1-in.-wide sample perpendicular to and across the seal area. The force required to pull the seal apart with

**Figure 5.** *Rolls of extrusion-coated materials are wrapped with moistureproof film to insure proper aging under high humidity.*



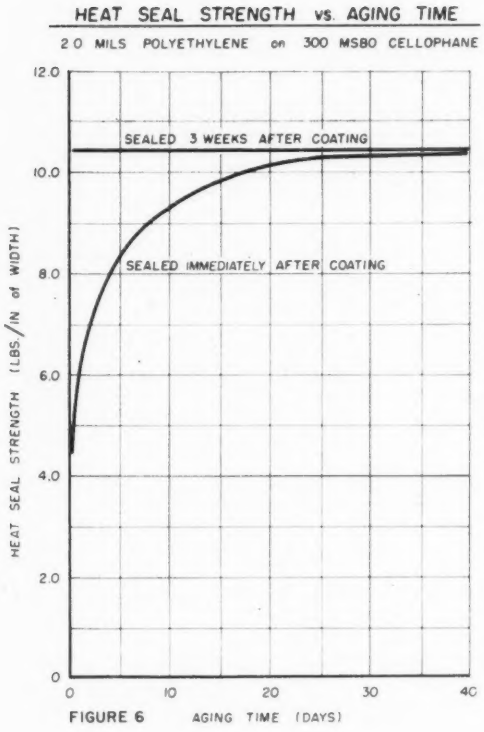



FIGURE 6

a Scott tester is the seal strength and is measured in pounds per inch of seal width. Aging tests on heat-sealed samples of various types of laminates fell into two categories:

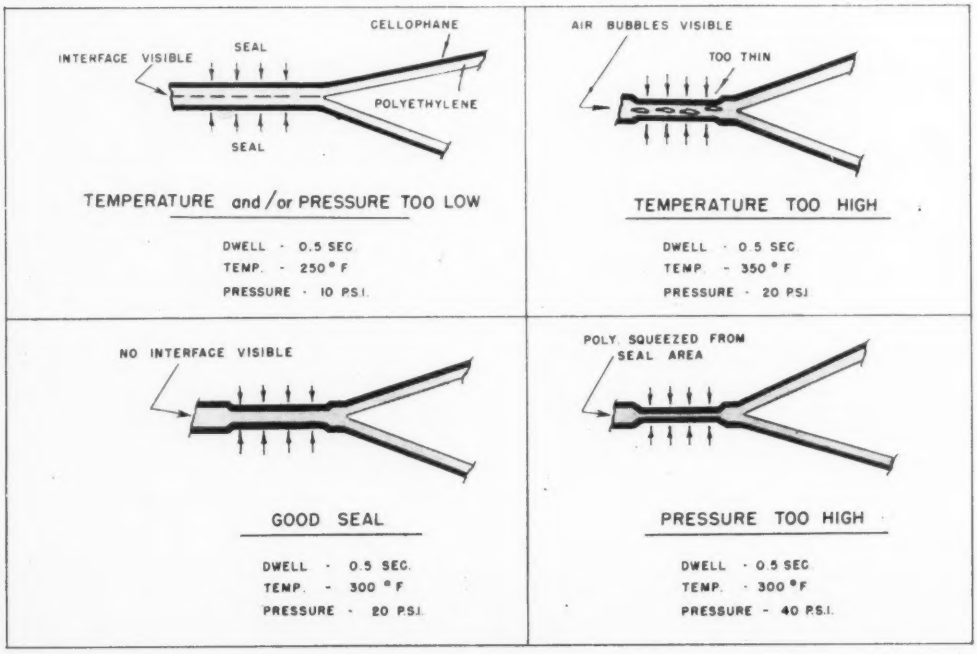
1. Heat seals on laminates immediately after the extrusion-coating operation. Seal strengths on these heat seals show that the seal strength improves with age, just as was found with bond strength.

2. Heat seals on laminates which had previously aged for three weeks or longer. Seal strengths on these seals reached maximum value 5 min. after sealing and did not change on additional aging.

Figure 6 shows typical heat-seal strength-aging curves for each of the above two categories. A study made on the actual physical failure of the heat-seal samples indicates that there should be a correlation between bond strength and heat-seal strength. The aging data shown in Figures 2 and 6 confirm this correlation.

The quality-control test for heat sealing is based on heat seals made 15 min. after the material has been extrusion coated. The sample is heat sealed at our plant on a laboratory Model J Wrap-Ade heat-sealing machine. The standard testing conditions used for a 2-mil-polyethylene/1-mil-cellophane combination are 20 p.s.i. for 0.5 sec. at 300 deg. F.

FIGURE 7



In determining the proper sealing conditions, a desired dwell time was selected (as would generally be the case on an automatic bag-making or pouch-filling machine) and then the pressure and temperature were varied to give the best seal for the type of material being used. Microscopic examination of cross-sections of the heat seals was also used to determine the proper sealing conditions. Figure 7 shows how the heat-seal cross-sections vary with the sealing conditions. This method of examining heat seals is also used by many of our customers in their evaluations of seals that are made on bag and automatic filling machines.

The quality-control limits for heat sealing are set in a manner similar to those described for bond strength. They are based on heat-seal values obtained 15 min. after extrusion coating, which will insure that all film within these limits will age to the proper ultimate heat-seal strength.

Excessive extruder melt temperatures (640 deg. F. and higher) can cause oxidation of the surface of the polyethylene and degrade the seal strength on aging. A very close control on the extruder melt temperature is the present means of preventing this excessive oxidation of the polyethylene. A very sensitive test for measuring oxidation of the polyethylene is needed. Current tests used to measure the amount of oxidation on "treated" polyethylene film were investigated and it was found that they are not sensitive enough to measure the smaller degree of surface oxidation which might tend to occur during the extrusion-coating operation.

**Thickness control**

There are two major types of thickness variation which can cause problems in extrusion-coated films. One is a variation in yield (sq. in. per lb.) and the other is a variation in gauge across the web profile.

The proper yield of the coated material is very important, because if it is too low the number of finished bag units that will be made per pound of film will be below that required. If the yield is too high it will indicate that the polyethylene coating is too thin and could adversely effect some of the "built-in" properties of the coated material. Yield control is achieved by holding the average level of the profile thickness plot (Figure 8) on the aim thickness and by checking the basis weight (lbs. per ream) of periodic samples of the material on a ream weight scale.

Although yield control is very important, it should not be used as the only quality-control means for thickness control. The variation in profile gauge is often overlooked in extrusion-coating control and specifications. This property is very critical to the customer making bags or operating an automatic bag-filling machine, for hard or soft areas in the roll can cause serious machinability problems. For example, on a Simplex bag machine, a hard edge on the roll of film being processed could cause the film to be baggy or to curl on this edge and result in poor tracking of the film into the machine or excessive wrinkles in finished bags.

The thickness of the film is measured with an 8-oz. dead-weight micrometer at approximately 1-in. intervals across the web on a sample taken from each roll that is extrusion coated. These readings are plotted on test data sheets as shown in Figure 6. Warning limits on these plots are set at $\pm 2$ sigma ($2\sigma$) statistical limits (approximately $\pm 0.15$ mil). For variations beyond these limits, adjustments are made to the [*Continued on page 174*]

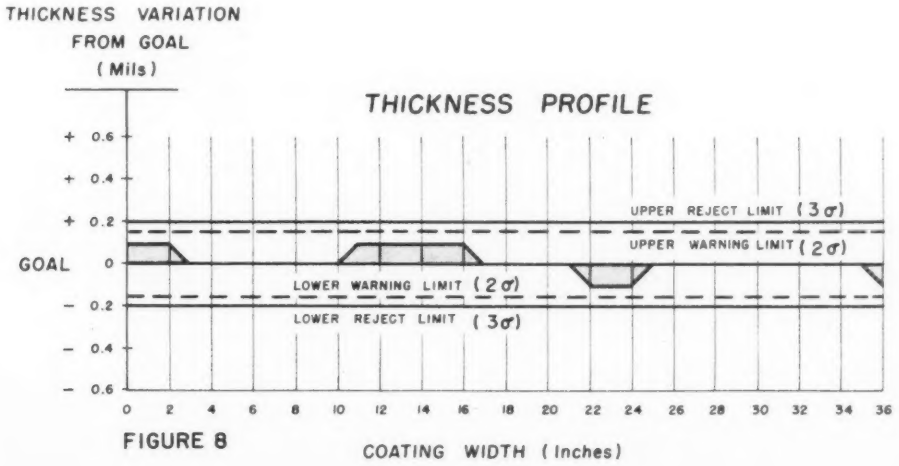



FIGURE 8

# High-density PE containers

*PART II. Evaluation requires testing of the product in bottles for permeability, leakage, distortion, impact, etc. Test methods are given.** By Brooks B. Heise†, J. H. Parliman†† and Jules Pinsky††

*Part I of this two-part article last month discussed the factors involved in selection of high-density resin and presented design criteria for blown bottles with relation to the resin. The discussion concludes with package evaluation, packaging-line equipment and test methods.*

The subject of package evaluation is indeed a broad one. We can only touch on some of the points to be considered. Such evaluations will usually start with the testing of the product involved in stock containers to determine its basic packagability in plastic. Such testing of containers is generally carried out in detail by the package purchaser and also by the container supplier.

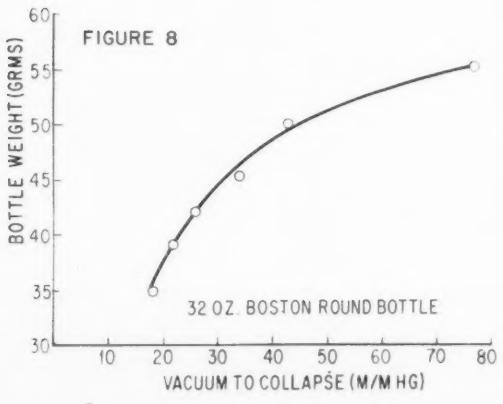
Where custom containers are involved, subsequent testing is done with sample containers to determine optimum bottle weights and walls, and final design considerations. And, where possible, this testing procedure is then followed by testing with production specification containers.

Obviously, the actual testing required will vary with the particular bottles and products involved. But, in all cases, we stress the fact that the customer must make the final decision as to the suitability of the package for the specific product involved. This point is not always understood, especially in view of the fact that we may conduct rather extensive testing. But when it is realized that the package supplier has no control over product composition, packaging-line equipment, or the storage and shipping conditions, no other policy on the part of the package supplier is practical.

In the discussions which follow, we will briefly discuss factors of permeability, leakage, side-wall distortion, impact, stiffness and packaging-line equipment for polyethylene containers as they are related to product as well as package evaluation.

* Adapted by permission from a paper presented at the 22nd Annual Forum of the Packaging Institute, New York, Nov. 2, 1960.

† Manager, Product Engineering; †† Technical Service Manager, and ††† Chief Physicist, Plax Corp., Hartford, Conn.




## Permeability

As has been pointed out before, high-density polyethylenes give appreciably lower permeation rates for liquids than the low-density materials. This is a most important factor—especially in view of the fact that many high-density polyethylene bottles are produced with thinner walls than similar low-density bottles. In any package evaluation of high-density polyethylene bottles, the permeability factor is always included.

Tables II and III illustrate the effect of increased density on polyethylene permeability. We should point out here that virtually all of the data presented were taken directly from Plax routine customer-product test files and not from tests specifically set up to produce scientific data.

In Table II, permeation for 1-oz. Boston-round bottles for methyl salicylate (oil of wintergreen) and a typical oil-in-water, perfumed cosmetic lotion are shown. The 0.920 density is a typical low-density polyethylene; the 0.930 material we class as an intermediate density; the 0.946 and 0.950 are high densities. Also included is an internally lined low-density polyethylene bottle.

The effect of increased density on permeation is obvious. We normally think in terms of a 0.95 material lowering permeation by roughly 50% to 88%, compared with low-density polyethylene. With methyl sal, in Table II, the permeation is lowered

by 84%. With the lotion, the figure is 52%. As might be expected, the 0.93 density permeation falls between the low- and high-density materials.

The lined bottle also illustrates a common lab finding. This particular lining is very effective with methyl sal and it has reduced permeation more than 98% at 100 deg. F. In this case, we could not recommend a high-density polyethylene bottle, but found the lining to be excellent.

With the lotion, the lining did not lower total permeation to a great degree. It is not effective so far as the water component is concerned, but does lower the perfume permeation appreciably. In this case, we found the high density to do an appreciably better job than the low-density material and did not find need for a lining.

Table III compares permeation data when 4-oz. Boston-round bottles were used in routine customer-product testing. We have, for more than 10 years, used a 16¾-gm. low-density 4-oz. Boston-round 24-410-finish bottle as a "standard" test container. For several years, we used the equivalent bottle at the same weight as our standard high-density test container. However, as we saw the general tendency toward lightweighting high-density bottles, we changed to a 12-gm. weight with 20-410 finish as a standard 4-oz. Boston-round test container.

Where data in Table III were obtained using 12-gm. test bottles, we have calculated (9),[1] for comparison purposes, permeation values for 16¾-gm. weight. The use of high-density polyethylene is definitely no cure-all for permeation problems. But when permeation is a borderline question, the high-density material will often extend the product shelf life into a commercially acceptable range.

### Leakage

There are two points to be mentioned here in connection with product evaluation as it is concerned with leakage testing:

1. Testing of the type described under "Test Methods" (below) is used principally to evaluate new and different designs. Once a particular closure or other fitment seal has been checked out by leakage test, we normally expect to be able to avoid leakage problems by conventional quality control of dimensions and materials. We freely admit the difficulty of interpreting accelerated laboratory testing in terms of field experience. However, our leakage test is so severe that if a package does pass this type of evaluation, actual problems are not very often encountered in the field.

2. The importance or probability of leakage being encountered with a given package depends greatly on the type of product being packaged. Nat-

[1] Numbers in parentheses identify References appended.

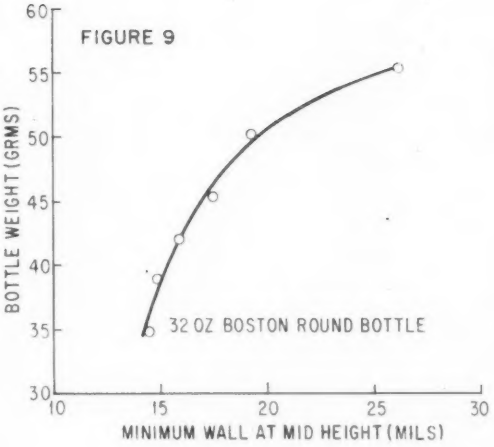



**Table II:** Effect of increased density on permeability

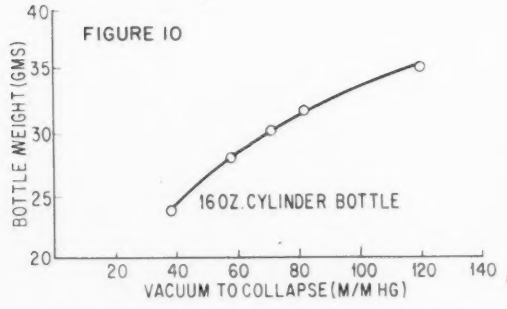
| | *Estimated % weight loss/year* | | | |
|---|---|---|---|---|
| | *Methyl salicylate* | | *Cosmetic lotion (o/w emulsion)* | |
| *Bottle material* | *73°F.* | *100°F.* | *73°F.* | *100°F.* |
| 0.920-density polyethylene | 29.0 | 110.0 | 1.6 | 7.4 |
| 0.930-density polyethylene | 13.0 | 54.0 | 0.8 | 6.0 |
| 0.946-density ethylene homopolymer | 4.5 | 20.0 | — | 4.6 |
| 0.950-density ethylene-butene copolymer | 4.6 | 19.0 | 0.76 | 4.8 |
| Internally lined 0.920-density polyethylene | Neg. change | 1.6 | 1.3 | 5.7 |

Note: Test bottles—4-oz. Boston round at 5 gm. weight.

**Table III:** Typical product permeability of low- vs. high-density polyethylene

| | *Estimated % weight loss/year* | | | |
|---|---|---|---|---|
| | *0.920-density polyethylene* | | *0.946-density polyethylene* | |
| *Type product* | *73°F.* | *100°F.* | *73°F.* | *100°F.* |
| Dishwashing detergent | 0.54 | 3.6 | 0.1* | 1.6* |
| Children's shampoo | 1.0 | 4.0 | 0.4* | 2.3* |
| Electric pre-shave lotion | 1.9 | 11.0 | 0.7 | 3.0 |
| Cologne for men | 3.3 | 12.0 | 0.5 | 2.3 |
| Bath oil (pine base) | 5.1 | 25.0 | 1.2* | 4.9* |
| Leather conditioner | 13.0 | 46.0 | 3.9 | 17.0 |
| Auto polish (silicone base) | 55.0 | 130.0 | 15.0* | 39.0* |
| Orange oil | 370.0 | 1600.0 | 66.0 | 200.0 |

Note: Test bottles—4-oz. Boston round 16¾ gm. weight.
*Values calculated from 12 gm. test-bottle data.




urally, with stock packages we must always anticipate that the worst type of "leakers" will be packaged. But where the product to be packaged is known, we often can use bottle and closure combinations which will not pass our usual leakage tests.

Obviously, any product evaluation must necessarily be guided by the type of product to be packaged so far as questions of leakage are concerned.

### Side-wall distortion

Questions of side-wall distortion, often called "collapse," are among those most frequently encountered in the evaluation of plastic containers for the packaging of commercial products. This is particularly true when cylinder bottles are involved.

There are a number of reasons for a bottle assuming a distorted side-wall shape when tightly capped and containing a liquid—or sometimes a solid—product. Among these are:

(a) *Oxidation.* The product uses up the oxygen in the air space of the container by various oxidation reactions and causes a partial vacuum.

(b) *Gas solution.* Here, gas—and it is usually the oxygen from the air space—dissolves in the product, causing a partial vacuum in the container.

(c) *Light.* This has been recognized only fairly recently as a reason for side-wall distortion. There are products which collapse only in the presence of strong light—as with the package sitting in a sunlit window or close to a strong light source. Apparently the light passes through the bottle wall (even colored bottles) and then catalyzes a reaction which uses the oxygen from the air space. Very often the specific reaction involved is obscure, but tests are not difficult to conduct to prove the significance of visible light and/or ultraviolet light.

(d) *Temperature cycling.* Filling bottles at significantly elevated temperatures and allowing to cool to room temperature, or filling at room temperature and then cooling, will create a partial vacuum. Thus, with cylinder packages we normally do not recommend filling above about 80 deg. F.

The distortion effect from cooling a package will usually disappear when the package is returned to room temperature; however, we have encountered some liquid where this is not true. One test used to check this point is simply to cool the package either to 40 or 0 deg. F. and then return to room temperature and observe the effect.

(e) *Swelling.* Certain liquids may not permeate significantly and yet cause a small amount of uneven swelling of the bottle wall, causing distortion.

Solutions to "collapse" problems are also varied. Among these are the following:

1. Use bottle shapes which either tend to prevent or reduce collapse, or which do not appear to be collapsed although the condition is present. This can be a most effective solution to a problem. Oblong bottles are usually among the best shapes to use. Ovals are often effective, but less so than oblongs. Rounds or cylinders are the poorest shapes to use where collapse is a problem; therefore, we usually test in these shapes in our laboratories.

2. Merely filling at lower temperatures will sometimes provide significant relief.

3. Nitrogen flushing is an obvious answer in some cases—and is commercially used.

4. Where light is the main problem, the use of bottles opaque to ultraviolet and visible light is an easy answer. Such bottles are now available.

5. Use of heavier side walls, which usually entails heavier bottle weights and consequent higher costs, is a practical answer in limited cases.

6. Sometimes the problem can be avoided by the use of product composition changes. This is usually possible only in the case of new products.

### Impact

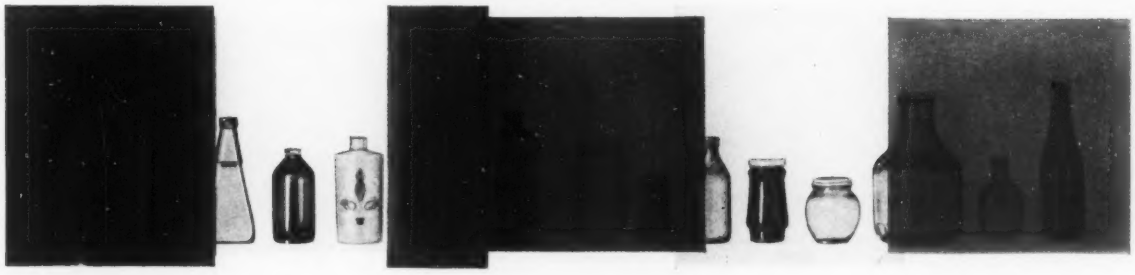
One of the more important properties which we check in evaluating high-density polyethylene containers is resistance to breakage on impact. The fact that most such bottles have been blown in comparatively large sizes, but with relatively thin walls, has made this factor important. Actually, there is probably no more valuable measure of the physical strength and general quality of a container than the impact test. A simple bottle drop test (described under "Test Methods"), carried out with reasonable statistical significance, will very quickly show up critical design features, flaws in bottle manufacture and use of improper material.

In conducting drop tests either for evaluating new packages or as a plant quality-control tool, we should emphasize the importance of careful recording of the specific type of breaks encountered and their exact position on the bottle, for these factors are usually of importance in determining just why the package breaks in the first place.

### Bottle stiffness

One of the more difficult areas of high-density-polyethylene bottle evaluation is the determination

## Do they buy... or just pass by?



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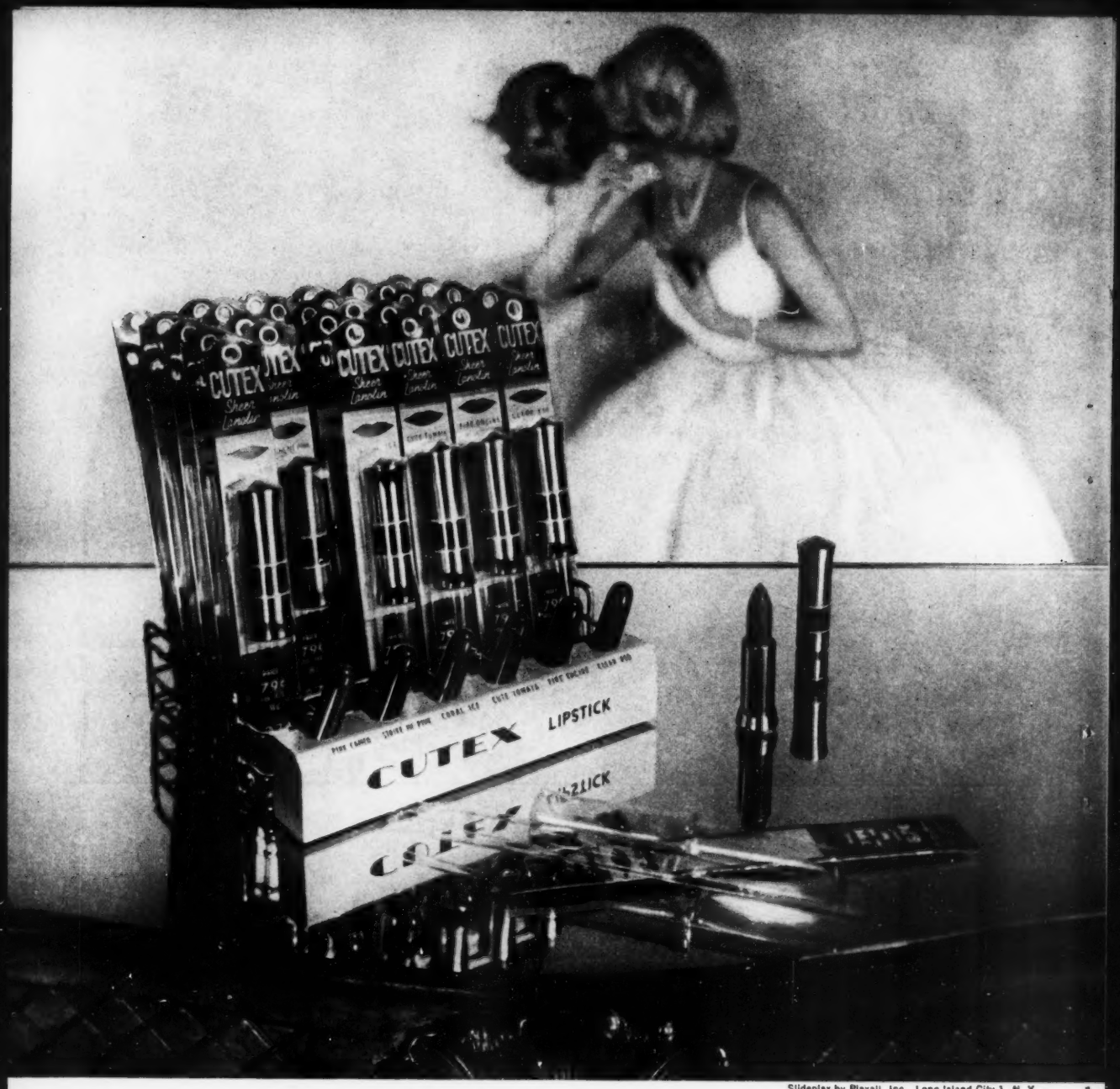


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MATERIALS FOR Celanese MODERN PACKAGING

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of proper weight. In most cases, we can blow a given bottle in a range of weights, all of which will provide satisfactory impact, crack resistance and leakage characteristics. The question usually centers around establishing the minimum weight which will provide acceptable stiffness as it relates to the "feel" of the package when picked up and also packaging-line handling properties.

About the best a bottle supplier can do is to provide advice to the customer, based on past experience and test data, as to the range of weights practical to consider for a given package. With this information and samples of the actual bottles in the suggested weight range, the customer must then select the minimum weight which will meet all of his particular needs for the package.

Figures 8 through 13 illustrate how the properties of a package change with varying weight. Two lots of bottles were used to obtain the data:

1. A 16-oz. cylinder, white bottle made from an ethylene homopolymer of 0.946 density (before pigmentation). Weights range from 24 to 32 grams. Bottle finish is 28-430.

2. A 32-oz. Boston-round, white bottle made from the same polymer as the 16-oz. cylinder. Weights range from 35 to 55 gms. Finish is 28-400.

We should point out that, except for the type of material used, other variables differ rather widely, i.e., different molds, capacity, shape, blowing machine and operator. The two lots of bottles were blown nine months apart.

Figure 8 shows the vacuum-collapse variation which takes place as weight is changed for the 32-oz. Boston-round bottles.

Figure 9 illustrates change in minimum side-wall thickness measured at mid-height (with a ball micrometer) with change in weight for the 32-oz. Boston-round bottles.

Figure 10 shows vacuum collapse change as weight is increased for the 16-oz. cylinder bottles.

Figure 11 depicts minimum wall vs. weight for the 16-oz. cylinder bottles.

The rigidity of bottles when subjected to a vertical load on the neck is of interest relative to handling on the packaging line. Figure 12 illustrates weight change vs. compressive load to deflect 16-oz. cylinder bottles ¼ in. at room temperature. These bottles were found to "bend" at the junction of the shoulder and neck.

Figure 13 presents a plot of vacuum collapse vs. "pick-up weight" (see "Test Methods") for the 16-oz. cylinder. The point of interest here is that although we freely admit to the problems of duplicating quantitative data with this crude type of "pick-up" test, rather nice correlation of "pick-up" values with other variables is possible for a single panel evaluation. And for the intended purpose of arriving at the "best" weight for a given bottle, such correlated data is of obvious value.

### Packaging-line equipment

Equipment and techniques are readily available for filling high-density polyethylene bottles at nearly any required speed. As the real need for faster lines has developed, equipment manufacturers have either adapted established machines or developed completely new equipment to meet the requirements. It is no longer surprising to see a packaging line operating at well over 200 pieces per minute with 12-oz. or larger bottles.

To obtain maximum efficiency when first handling a new package on a high-speed packaging line, we feel it is most important to have previously checked out on the line the bottle in question. And here we mean the size, shape and weight of bottle with its particular wall distribution.

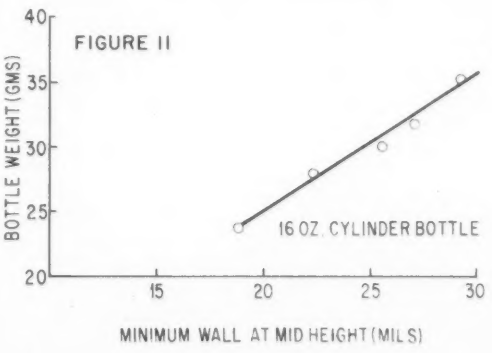
### Test methods

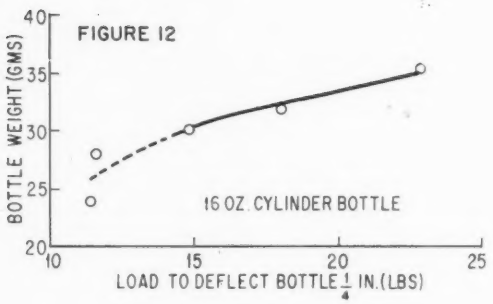
Presented below are very brief descriptions of six test methods used at Plax Corp. to evaluate high-density polyethylene containers.

1. *Environmental stress-crack test.* The bottles to be tested are approximately a third filled with a 33⅓% Igepal CO-630-water solution and tightly sealed with a suitable closure. The test containers are then set in a pan containing the Igepal solution so that their bottom areas are completely within this environment. They are then aged in a 140 deg. F. circulating-air oven for a period of time. In the case of new-material evaluation, the bottles are expected to age for seven days without cracking. As a matter of practical plant quality control, the testing is usually stopped after five days.

The bottles are examined daily for evidence of cracking failure, which is easily detected by a sudden loss of internal pressure, or by escape of contained test fluid observed upon slight hand pressure.

2. *Impact test.* For laboratory testing, the bottles






are filled to nominal capacity with 70 ±5 deg. F. water and dropped first on bottom corner, then on flat side and last on flat bottom. Drops are started at 3 ft. and are increased in 1-ft. increments through six feet. Thus, a bottle which does not break has been dropped a total of 12 times.

For in-plant testing of production containers, this test is often modified by dropping the bottles only from 4 ft. and in the single position most likely to cause breakage. With the statistical quantities tested, this simple procedure provides very good control of the impact properties of a given bottle.

3. *Leakage test.* Efficiency of closure seals is checked by temperature cycling and vibration, using a standard test liquid. Test solution is made up of 0.1% wetting agent (in our case, we use Aerosol O.T.) and 0.001% gentian violet in water.

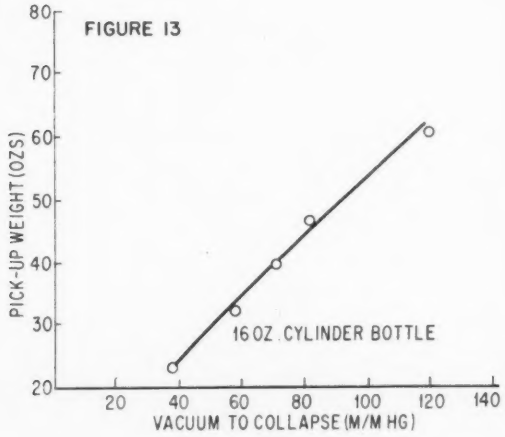
This solution seeps readily through a poor closure seal and the purple color of the solution is apparent where leakage occurs.

Cycle used is 24 hrs. at 120 deg. F., 15-min. vibration while still warm; followed by 24 hrs. at 73 deg. F., 15-min. vibration, and 24 hrs. at 35-40 deg. F. with 15-min. vibration.

Bottles to be tested are filled to nominal capacity with the leakage liquid and the closures are applied with specified torque. All packages are inverted and packed in cartons to be used, where they are available. Vibration is carried out at one G on an LAB vibration table.

All packages are checked for evidence of leakage before and after each of the vibration periods.

Statistical sampling quantities of all of the package components are used.




4. *Side-wall distortion test.* We are concerned here only with cylindrical-shaped bottles. This shape is the most prone to take on distortion due to the action of the products contained in the bottles or for other physical reasons.

The most accurate method of measuring side-wall distortion is with vernier calipers, but this is time consuming and is usually done by the inspection or the quality-control groups.

However, for practical, fast evaluation, we usually check larger bottles—8 oz. or more—by simple hand and visual methods. For any given bottle, these testing methods are usually adequate and the data obtained can be reproduced.

Spinning a bottle in the hand will reveal very small out-of-round conditions. For instance, one check showed that we were "feeling" out-of-roundness conditions of 0.015-0.020 in. or more. A typical description of side-wall distortion is:

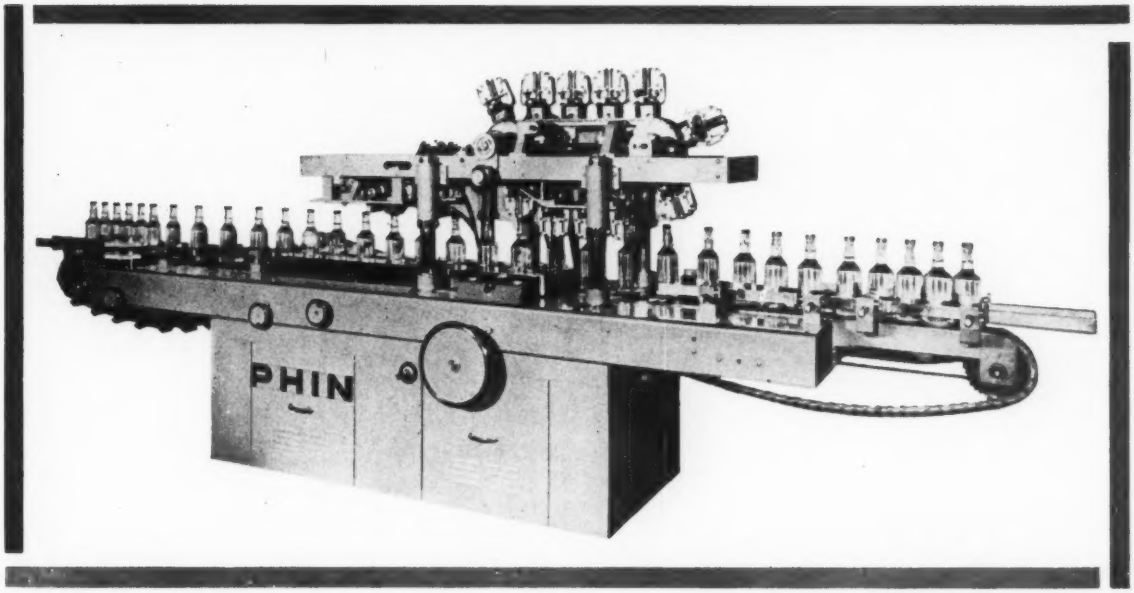
| *Amount of side-wall distortion* | *Description* |
|---|---|
| (a) Cannot "feel" or see | None |
| (b) Can "feel," but not readily see | Very slight |
| (c) Can see, but is not objectionable | Slight |
| (d) Can see and is objectionable | Medium |

When containers smaller than 8-oz. are to be checked quickly, we usually roll the bottle side along a straight edge and grade the condition in a manner similar to that described above.

5. *Side-wall rigidity tests.* Discussion here relates especially to cylindrical-shaped containers, although somewhat similar methods of testing are often used for non-cylindrical bottles.

One of the simplest methods for checking package side-wall rigidity or flexibility is to determine the amount of vacuum required to collapse the bottle. We often use a simple vacuum pump-mercury manometer set-up for such testing. A rubber stopper is used to make the seal with the bottle finish. The method is fast and reproducible.

Another method used to judge side-wall stiffness involves a "pick-up" test. It is of most value in comparing different weights of the same bottle. Bottles are filled to nominal [*Continued on page 167*]




# New, High Speed Strip Stamp Machine

- **One machine, adjusts from miniatures to quarts**
- **Straight line, continuous motion operation**
- **Guaranteed speed: 200 (or more) stamped bottles per minute**

**Adjustability and Range.** Miniature to quarts, round, flat, oval or square. Change-over 30 minutes or less.

**Guaranteed Production.** Standard Machine . . . . . 120 per minute
High Speed . . . . . 200 per minute

**Finished Job Guaranteed.** Complete coverage of adhesive full width of stamp. Complete adhesion of stamp to bottle. Stamp ploughed into crevices of cap and bottle neck. No loose edges to cause stamp damage when bottles are handled. Accurate application and positive registration of stamp to bottle—same bottle can be run through the machine six times, stamp on stamp, with complete registration accuracy.

**Adhesions.** Practically all types of adhesives can be used, including latex, hot melts, etc.

Send one capped, labeled, empty bottle of each of your sizes to Toronto and ask us to give you complete particulars.

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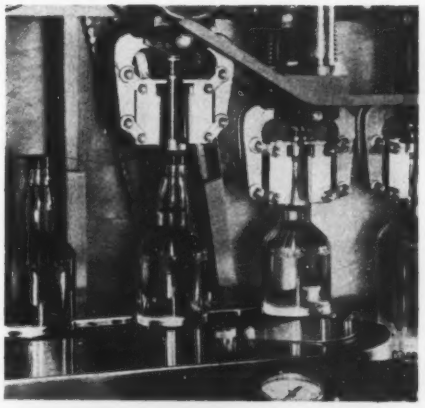
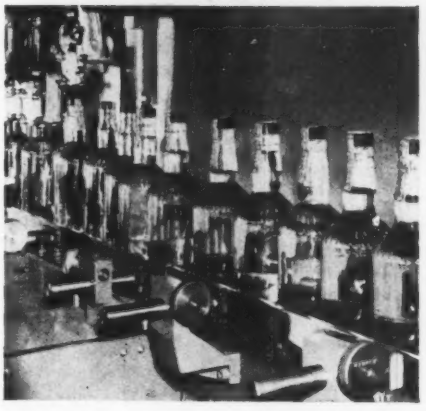
**PACKAGE**





With stamp applied to cap (*above*) pressure pads descend, grip bottle, and fix stamp firmly to the exact contours of cap and bottle neck. Finished, stamped bottles (*below*) are taken off on a moving conveyor.

# Questions & Answers

This consultation service on both technical and engineering subjects is available at your command. Simply address your questions to the Technical Department, Modern Packaging, 575 Madison Ave., New York 22, N. Y. Your name or other identification will not appear with any published answer.

### Waxing of roll stock

**Q:** *We have recently started to wax some of our laminated and printed roll stocks. We buy resin-wax blends that are applied on one side by a roller coater. The wax weight is about 10 lbs. per ream of 3,000 sq. ft. The waxed web is cooled in a 20-ft. tunnel, using air cooled by a water spray and circulated with fans. We notice variations in the appearance of the wax surface and in a few cases we have had some picking of the wax in rewinding on the slitters. Can you suggest better operating controls, or a more reliable process that we can use for this waxing operation?*

**A:** Your problem of variations in surface appearance and offset of the wax coating results from your system of cooling the waxed web. The present cooling tunnel gives too little time for enough heat removal at higher web speeds. Also, the cooling-air temperature can vary widely, since you apparently do not use refrigeration to cool the water.

The surface appearance or gloss of wax will depend on the rate of cooling of the melted wax coating. This fact is why cold-water waxing or refrigerated chill rolls are used to obtain the maximum surface gloss of wax coatings.

A wax-cooling system must also remove sufficient heat from the molten coating and the supporting web to drop the temperature and heat content low enough to prevent blocking or offset in the roll. The combination of limited time for cooling, variable cooling-air temperature and variation in the heat capacity of different base stocks results in unreliable and insufficient cooling.

If you desire to obtain the maximum surface gloss, you should use chill-roll cooling. Such a system consists of two or more rolls with cooling by refrigerated water or brine. The size, number and cooling capacity of these rolls should be designed to give ample and rapid cooling at maximum web speeds and with the heaviest wax coatings. Such a chill-roll system is compact and commercially available. Its performance will eliminate any blocking or offset and will give your products an improved surface appearance in comparison with those produced on your present air tunnel.

### Plastic packaging for candies

**Q:** *We are dissatisfied with both the appearance and protective qualities of our 1- and 2-lb. boxes of candy. We have heard about many new materials, such as plastic foams and sheet. Have any of these materials been used in candy packaging?*

**A:** New plastic materials will probably play a very important role in candy packaging within the next few years. Thermoformed sheet plastics, such as polyvinyl chloride and bioriented polystyrene, have already been used for trays in candy boxes. These economical materials will undoubtedly gain even further use as new ways are found to combine them with both folding and set-up box constructions.

Foamed plastics are on the verge of breaking into this packaging field, too. One of the first uses may be a lamination of thin, expandable polystyrene foam to paper. In either plain or embossed form, this material can be used as a pad for candy boxes. It provides insulation, is impervious to moisture and has a glossy white surface.

Not beyond the realm of possibility are molded platforms of foam with individual pockets for the candies. Such a container could be covered with a full-telescoping lid thermoformed from sheet plastic. While this would be a premium container, it is possible to make such a package for less than the cost of many of the very elaborate set-up boxes which are used today.

### Automatic capping

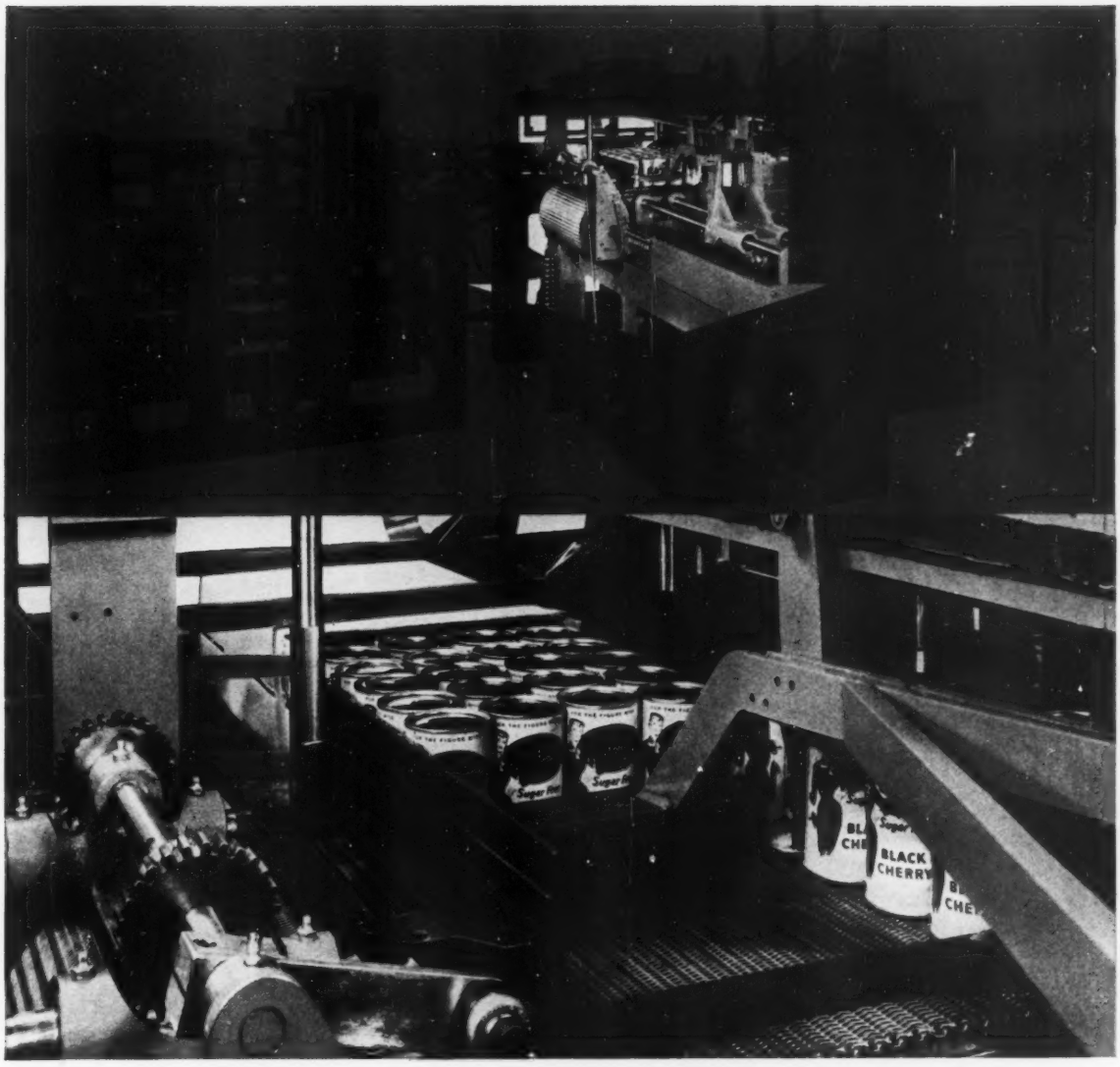
**Q:** *We are using several different kinds of custom-molded caps with unusual shapes for one of our bottles and cannot handle these caps on our present capping machine. We have been applying these closures by hand and would very much like to switch to a mechanical operation. Are there any capping machines available that can adjust automatically to a variety of shapes?*

**A:** Theoretically, engineers could build a machine that would instantly adjust to every style and size of cap ever made—but the cost would run to astronomical figures and like its human equivalent, the Jack-of-all-trades, it would probably handle none of these closures very well. But, if we eliminate some of the most impractical implications in your question, it should be possible to find a way to handle your bottle-capping operation mechanically.

First, you imply that several different cap designs must run simultaneously and at random on the machine. Selection and adjustment mechanisms to handle this facet of the capping operation would, we fear, cost far more than hand labor. Therefore, we suggest that you schedule the packaging operation to run each cap design separately and then mix the capped containers for the shipping cases (if this is your goal) in a subsequent operation.

Second, you have not specified how complex the shapes of these caps are or how much the shapes differ from each other. It would be ideal if the cap skirts, which are normally gripped by the chucks on the capping machine, could be made uniform—with the variations in the designs being restricted to the top portions of the closures. This might enable a single size of chuck to be employed and would eliminate the need for change parts.

Even if your caps are non-symmetrical, however, it is possible to handle them mechanically with recently developed cappers incorporating self-centering chucks or various resilient gripping pads. Extreme differences in the caps, though, will require a correspondingly greater number of change parts and decrease the speed with which you can switch over your capping line.




25 single tier cases per minute loaded by

# new Jones NMCP

## nova motion case packer

**Fast:** new Jones NMCP collects and loads 600 cans/minute into 24-pack case. Machine can be operated at equally productive speeds for other can packs and carton patterns.

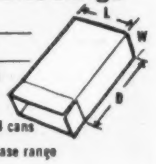
**Automatic:** case feeding and opening, can collecting, dividing and loading, case gluing and sealing.

**Economical:** uses single tier end loaded case offering board saving over single tier top loaded case. Case with easy opening feature doubles as a tray for materials handling and as a package merchandiser.

**Versatile:** manufacturers processing food, beer, soft drinks, household chemicals and similar products in a number of different can sizes, welcome the NMCP. Machine will also load rectangular and square-shaped cartons in single tier end loaded cases.

**case and can size range**

| | L | W | D |
|---|---|---|---|
| min | 8½ | 3 | 8 |
| max | 13 | 7½ | 18¼ |




from 46 oz juice to 202 x 214 cans

or cartons within the above case range

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# plants & people

**Packaging Corp. of America**, Evanston, Ill., enters the plastics-material supplying field with the acquisition of **Worcester Moulded Plastics Co.**, Worcester, Mass. The merger brings together a paperboard-packaging supplier and a custom molder of expanded and injection plastics materials. According to Packaging Corp., the Worcester firm will form the nucleus of a broad new plastics division. With emphasis on foamed-polystyrene-and-paperboard combinations, the new div. will operate under the direction of **Horace Gooch**, co-founder of Worcester Moulded Plastics. Mr. Gooch becomes a v.p. of Packaging Corp. **Philip J. Graham**, co-founder and former pres. of Worcester, will be in charge of research, engineering and machine development in the division.

*Hait*

**James M. Hait** is the newly elected pres. of **Food Machinery & Chemical Corp.**, San José, Calif. The position also includes the duties formerly supervised by the board chairman. Mr. Hait has served FMC since 1928. His most recent position was that of exec. v.p. of the company's Ordnance Div. and director of engineering.

**Elmer D. Abramson** is newly elected pres. of **Central States Paper & Bag Co.**, St. Louis. He was exec. v.p.

**Milprint, Inc.**, Milwaukee, has consolidated its West Coast activities in a new, $3 million plant in S. San Francisco. The 57,000-sq.-ft. facility will print and convert all flexible packaging films, aluminum foil and film/foil laminations. Basic research in package forming and design will continue to be done at company headquarters. A seven-color rotogravure press, six-color flexographic press, bag-forming machines and laminating equipment of the latest design are in use at the new West Coast plant.

*Mulford*

**Owens-Illinois Glass Co.**, Toledo, has elected **Ray H. Mulford** exec. v.p. He will continue as pres. of the company's Glass Container Div. A v.p. of O-I since 1949, Mr. Mulford joined the company in 1933. He spent 12 years in the Pacific Coast Div. In 1953 he became gen. mgr. of the **Kimble Glass Co.** sub., and was named its pres. in 1960.

**Allan Godshall** is new advtg. mgr. for **Mead Papers, Inc.**, and **Mead Pulp Sales, Inc.** Appointed advtg. mgr. for **Mead Board Sales, Inc.**, and **Mead Containers** is **Morris Messick.** The **Mead Corp.**, Dayton, O., parent company, has named **Clifton T. Wilson** product publicity mgr. for all products of the organization.

**Bloomer Bros.**, Newark, N. Y., carton manufacturer and converter, and **Lassiter Corp.**, Charlotte, N. C., converter of packaging films and manufacturer of carton labels and laminates, have been merged into **Riegel Paper Corp.**, New York. The companies will operate as divs. of Riegel. The mergers, approved by stockholders, resulted in the issuing of 278,843 shares of Riegel common stock in exchange for all common stock of acquisitions.

**Arthur Snapper**, board chairman of **Milprint, Inc.**, has been elected chairman of the board of **Nicolet Paper Corp.**, De Pere, Wis. **Henry Fowler** has moved up to the presidency of the glassine paper manufacturer, succeeding Mr. Snapper. He was formerly v.p. and gen. mgr. of the **Milprint** sub. **Herbert Wenberg** is now v.p. in charge of technical services. New v.p. of sales is **Robert Etter.**

**Robert S. Bloomer** and **J. Hanes Lassiter** have been elected to the board of **Riegel Paper Corp.**, New York. Mr. Lassiter also becomes a v.p. of Riegel. The two men formerly were chief exec. officers, respectively, of **Bloomer Bros. Co.** and **Lassiter Corp.** Both companies have been merged into Riegel. **Jack E. Hutchinson** has been appointed mgr. of Riegel's newly created folding-carton sales dept. He will be headquartered at the Bloomer Div. in Newark, N.Y.

*Bloomer* *Lassiter*

**Earl Graham** has been named v.p. of sales of **Clayton Corp.**, St. Louis, supplier of dispensing valves and protective covers for aerosol containers. Mr. Graham recently won the T.O.C. Award for the best paper presented at the **Packaging Institute's** 1960 Forum.

A realignment of marketing functions at **AviSun Corp.** has been effected. **Edwin M. Irish**, formerly product mgr.-polymer, is now mgr. of sales. **Dr. E. T. Severs**, former product mgr.-film, becomes mgr. of market development. Both are newly created positions. Mr. Irish will direct sales of polymer and film, while Dr. Severs is in charge of market development for polymer, film and polypropylene fibre. **James C. Warren** is new polymer sales mgr. **John Adrian** continues as mgr. of film sales. In the market development setup, **Ralph M. Winters** is responsible for film, **Dr. A. Ross Adams** for polymer, and **Donald H. Fiedler** for fibre. AviSun, a jointly owned affiliate of **American Viscose Corp.** and **Sun Oil Co.**, is now located at 1345 Chestnut St. in Philadelphia.

The formation of a new div. for the production of polystyrene foam for packaging has been announced by **General Box Co.**, Des Plaines, Ill. **Charles E. Keene**, former mgr. of the firm's wirebound and corrugated plants in Meridian, Miss., will manage the new div. Supt. of the plastics div. is **Harold F. Shroyer**, former pres. of **Insta-Mold Plastics, Inc.** The new set-up, already in operation, will mold components for broad markets, including industrial and proprietary packaging.

*Keene*

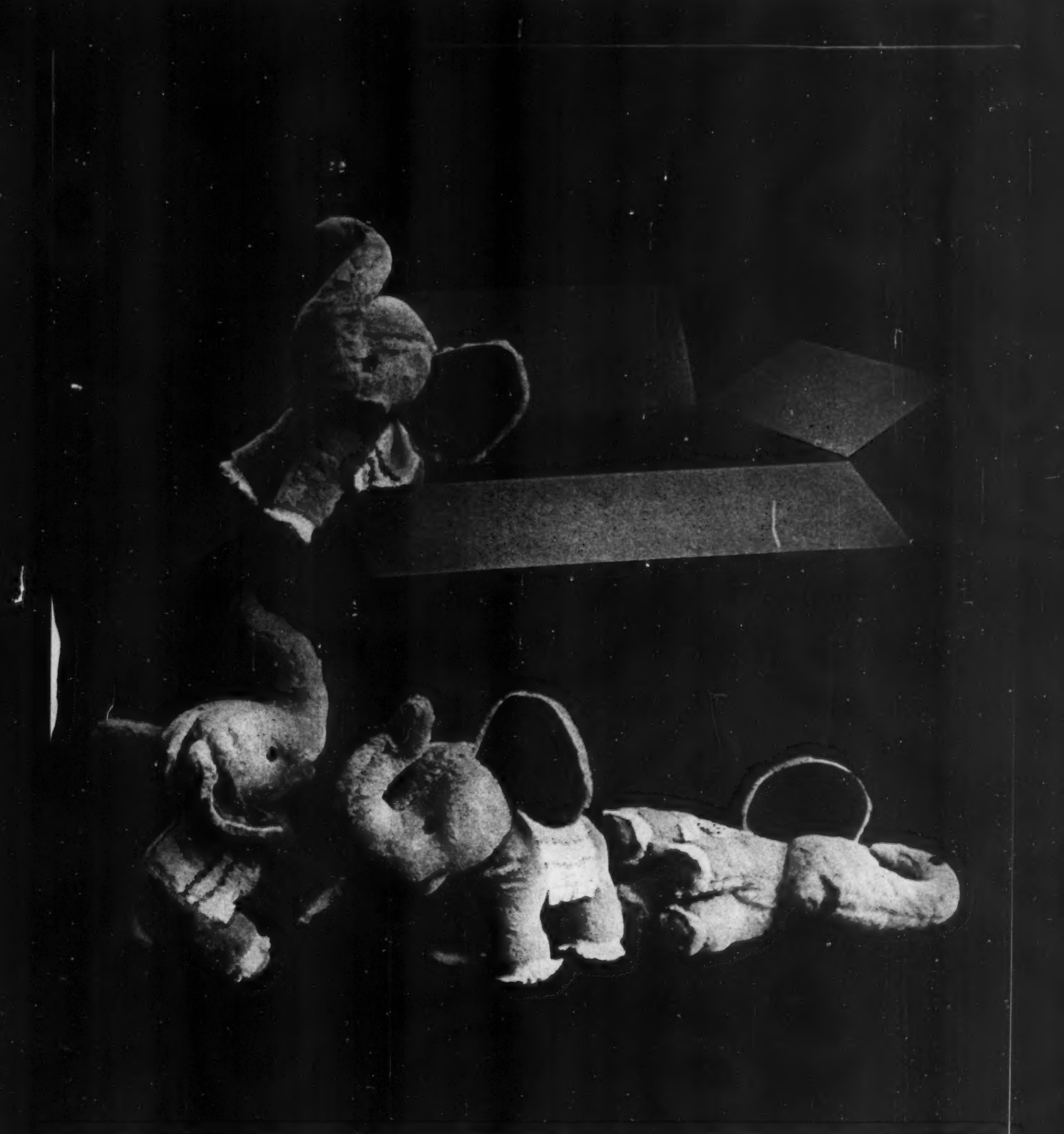
**Aluminum Co. of America**, Pittsburgh, has announced that all its foil-producing plants are now equipped to splice ends of foil rolls with high-frequency sound waves. Ultrasonically spliced foil affords savings to foil converters and permits higher operating speeds on foil processing equipment.

An anti-trust action to force **Continental Can Co.**, New York, to divest itself of the **Hazel-Atlas Glass Co.**, has been denied by Federal Judge Frederick vanPelt Bryan. The suit was brought by the U.S. Department of Justice, which contended that Concan's acquisition of Hazel-Atlas was in violation of Section 7 of the Clayton Act, which bans acquisitions that "tend to lessen competition or to create monopolies." The Justice Department has indicated that it will appeal the decision to the United States Supreme Court.

**The Rap-In-Wax Co.**, Minneapolis, has acquired **Western Foil Converters** of Berkeley, Calif. **Nathan Stillman** has been named pres. of the new sub., which produces wax and glue foil laminations, embossed and colored, mounted and unmounted foil, as well as polyethylene-coated papers, films, foils and printed flexible packaging materials.

**W. S. Ziegfeld** has been promoted to chief packaging engineer of the **Armstrong Cork Co.**, Lancaster, Pa.

**Dennison Mfg Co.**, Framingham, Mass., has purchased **Thayer Mfg. Co., Inc.**, Norwich, Conn. The new acquisition, to be operated as a wholly owned sub., will be transferred to Maynard,



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Toy elephants, to be sure. But Hoerner corrugated specialists have solved many weighty packaging problems. They have packaged juke boxes, motors, appliances, boats, playground equipment, and many other heavy items that need strong packages.

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GHB Model "Zenith-407" Flexographic Press

## Faster Flexoprinter has new design to beat vibration

**To cut out vibration, all driving gears are contained in one casing located at the outside of the machine frame and are running in an oil bath constantly circulated by an oil pump.**

**The heavy and sturdy design ensures.**

- **silent running**
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- **long life**
- **absolute accuracy of register.**

**Designed for continuous high-speed printing on paper, cellophane, plastics, and aluminium foil.**

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Paper Converting and Printing Machinery

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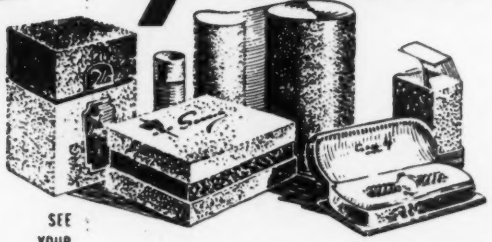

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Mass. where it will continue to manufacture a wide variety of fabric ribbons for the gift wrapping and other markets. Senior officers of Thayer are **Philip B. Hamilton,** pres., and **Francis J. Gilgun,** v.p.

**John J. Luviano** is new v.p. of the machinery div., **Crown Cork & Seal Co.,** Philadelphia. The company plans to widen its activities in the food-packaging field with newly designed equipment in nitrogen packaging, and Mr. Luviano will spearhead a drive for expanded machinery sales to the food and beverage industries.

**Paul W. Lyon,** mktg. research mgr., has been promoted to mgr. of mktg. services by **West Virginia Pulp & Paper Co.,** New York. He will have over-all responsibility for advtg., sales promotion, trade relations and packaging. Mr. Lyon will continue to direct mktg. research. Westvaco also has made three other executive appointments. **John B. Wyatt,** New York regional mgr. of the company's **Hinde & Dauch Div.,**

*Lyon*

*Wyatt* *Kettrick* *Waterman*

takes the newly created position of mgr. of commercial development. **Robert S. Kettrick** succeeds him as New York regional mgr. **Roland M. Waterman** moves up to mgr. of Westvaco's Kraft Div. sales, succeeding Mr. Kettrick in that position.

**General Foam Corp.,** New York, has completed a major addition to its Hazleton, Pa., plant, providing basic manufacturing facilities for urethane foam. The installation reportedly affords a production capacity sufficient to accommodate a 350% increase in sales volume and marks General Foam's transition from operations solely as a distributor and fabricator to complete production of the foam, from constituent chemicals through finished form.

**Robert P. Jensen** has been elected exec. v.p. of **Pacific Coast Foil Co.,** San Francisco. He was formerly mgr. of operations of the products div. of **Kaiser Aluminum & Chemical Corp.**

Modern general offices and a plant annex housing two-color offset printing presses mark completion of an expansion program at the **Crowell Carton Div. of St. Regis Paper Co.** in Marshall, Mich. Special atmospheric and temperature controls have been installed in the new building, which is under the supervision of **Henry L.**


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of RODENT BAIT STATIONS

no problem at all for PLAXALL

. . . quantities so large that if placed end to end the plastic trays would stretch from New York to beyond Chicago

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Huge, continuous rolls of plastic material feed into high-speed equipment to automatically pressure-form, trim, and stack these trays with the precision and accuracy of metal stamping . . . each forming featuring girder-like cross bracing and precisely cut rolled edging to add strength and rigidity to the lightweight plastic.

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Whether the quantity be measured in thousands or millions, PLAXALL'S automatic equipment coupled with more than 20 years of forming experience cuts prices to a fraction.

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These 4¼ x 6 inch trays are produced at a rate upwards of 6,000 per hour per machine. When delivery speed is important, PLAXALL'S reliable, efficient high production facilities provide the answer.

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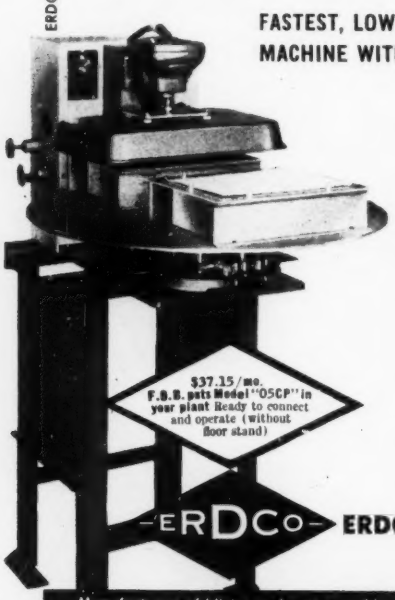
# New large, low cost Clear-Pak® Jr. seals BIG blister every 3 seconds

**FASTEST, LOW COST BLISTER PACKAGING MACHINE WITH AUTOMATIC ROTATING TABLE**



Fully powered for high speed economical production, Erdco "05CP" table automatically rotates and seals while next package is being loaded.

**Advantages of Erdco "05CP"**

**Easier-than-ever to operate** . . . one inexperienced girl can load and seal every 3 seconds.

**Easy size or shape change-over** . . . less than 5 minutes. Low cost dies can be made in your own shop.

**Large sealing area** . . . 28" diameter table can seal 10x13" blister packages or any number of smaller packages, depending on sizes.

**Compact** . . . only 28x26" bench area is needed.

$37.15/mo. F.B.B. puts Model "05CP" in your plant Ready to connect and operate (without floor stand)

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Manufacturers of blister packaging machines that feed, form, seal, die-cut automatically

# Now... Automatic Blister Sealing

## with new blister turntable or conveyor

★ Seals in less than 1 second ★

★ Seals are water, dust and air tight ★

★ Manual or fully automatic ★

Here's a new, advanced method of blister sealing that makes sealing cycles of less than 1 second possible! Seals to cardboard, plastic or coated materials . . . features up to 7" stroke for sealing large, high objects. Turntables are manual or fully automatic . . . have up to 24 stations . . . are available in 50", 60" or 72" diameter plate sizes.

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## Plants & People [*Cont'd*]

**Didier**, recently appointed mgr. of the offset printing dept. Both presses are reportedly capable of producing 6,000 units per hour.

**Dyn Corp.**, Cliffside Park, N.J., contract packager, reports that it has enlarged its facilities by adding automatic machinery for flexible-unit or strip packaging of tablets, capsules, powders, liquids, creams and small-item general merchandise. All flexible-packaging materials, including water-soluble polyvinyl alcohol, can be handled, according to the supplier company.

*Murphy*

**R. Blair Murphy** has been named to the newly created post of brewery-packaging market mgr. by **Reynolds Metals Co.**, Richmond, Va. He is now responsible for all Reynolds marketing activities involving packaging products used by the brewing industry. According to Reynolds, the new post was made necessary by the company's growing range of packaging products for brewers.

**Robert J. Metzler** has been promoted to v.p. of mfg. for **Ludlow Papers** and **Ludlow Plastics**, divisions of **Ludlow Corp.**, Needham Heights, Mass. He will supervise operations at Ware and Framingham, Mass., Netcong, N. J., and Homer, La.

**Zarn, Inc.**, Reidsville, N. C., is now producing blow-molded items. The company is making stock polyethylene bottles and proprietary articles and is equipped for custom-molding containers ranging from 1-oz. to 5-gal. capacity. The supplier plans to utilize both low- and high-density polyethylene, other polyolefins, nylon and high-impact polystyrene. **Dr. Clayton J. Ammondson** is pres. of the company.

*Taylor*

**J. W. Taylor** has succeeded **J. C. Mulholland** as sales mgr. of Crossett Paper Mills, **The Crossett Co.**, Crossett, Ark. With the organization for eight years, he formerly served as Eastern Div. sales mgr. for the paper mills. Mr. Mulholland has resigned to become v.p. of board div. sales with the **Packaging Corp. of America**, Evanston, Ill.

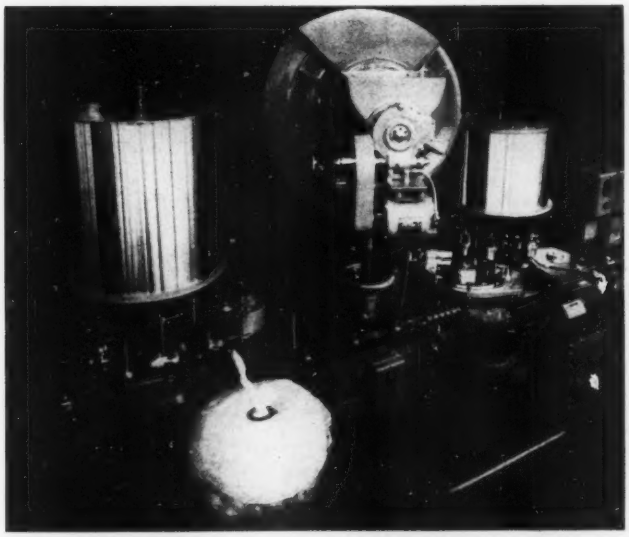
In his new post as mgr. of the foods div. of **Brockway Glass Co.**, Brockway, Pa., **Alex R. O'Briant** will coordinate and expand the company's services to the food industry.

Plans for construction of a food-package manufacturing plant at Chambersburg, Pa., have been announced by **Marathon, Div. American Can Co.**, Menasha, Wis. Completion of the facility, which will produce a diverse range of plain and printed paperboard [*Continued on page 133*]

## Wad your containers with the

# CONSOLIDATED KOTTONER

**Your most efficient equipment for Automatic Bottle Wadding**



Consolidated KOTTONERS will speed your production and reduce your costs in wadding pill, capsule and tablet containers with either standard or "inverted U" type of inserts. Capacities range from 40 to 310 wadding operations a minute with complete synchronization not only with CaPeM capping equipment but with all other related units. Cotton weight may range from 3 to 22 grams.

While the principal application of Consolidated KOTTONERS is with smaller packaging units — from 25 to 100 by count or from ½ to 6 ounces by size — they can frequently be adapted to other requirements. In any case, the satisfactory experience of hundreds of users proves that you will find the Consolidated KOTTONER the finest of all automatic wadding equipment. It will serve you economically and efficiently for years to come.

For complete information and quotations, write outlining your needs and send us filled and wadded samples of all size containers to be handled.

*Model KL-10-TB Consolidated KOTTONER (left) in use with Model D-10-F CaPeM Capping Unit.*

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**STOP GLUE WASTE**

**CUT MAINTENANCE**

**SAVE UP TO 83%**

**WITH FF GLUE GUNS**

Stripe-action roller gun

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Spot guns, machine mount

You can throw away your messy rolls, clogged brushes, open glue pots when you install FF glue guns. And you cut gluing costs up to 83%! Because the amazing FF system is totally enclosed, engineered to put glue exactly where you want it and in the precise amount required . . . fast, efficiently and without waste. Over 600 stocked models handle most mechanical and manual operations . . . with specials and miniatures available to meet any unusual gluing conditions. Easy to install and operate. Fully guaranteed. Thousands of enthusiastic users. Illustrated catalog available upon request. Write, wire or phone for your copy today.

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**MANHASSET MACHINE CO., INC.**

109 Bayview Ave. • Amityville, N. Y.

These attractive bottles are blow-molded of BAKELITE Brand polyethylene by Owens-Illinois Glass Company for Lever Brothers.

# CLEAN UP WITH BLOW-MOLDED PLASTICS!

Next time you're in the supermarket, walk down the aisle to the liquid detergents. No need to search—you can't miss them—row on row of gay, practical, persuasive plastic bottles in different sizes and shapes. For Lux Liquid, Lever Brothers chose this Doric bottle. It is blow-molded of a BAKELITE Brand high-density polyethylene compound specifically formulated for the packaging of detergents.

This formulation is especially suited to the application because of its excellent resistance to stress cracking, a serious consideration in detergent packaging. The result is long shelf life and no breakage—along with such other advantages as light weight (shipping economy) and trouble-free moldability (production economy), plus the selling power of distinctive shapes and colors.

You may not sell liquid detergents—or even put your product in bottles. But you still should investigate the advantages of blow-molded polyethylene packages. You can choose from a complete range of BAKELITE Brand polyethylenes—low-, medium-, or high-density—to fit your requirements. Union Carbide Plastics Company can also give you technical aid based on years of research and experience in blow-molding materials and techniques. Whether you need a flexible or semirigid package, you will find the materials and the knowledge here.

For information on BAKELITE Brand polyethylenes for blow-molding, write to Dept. HA-86, Union Carbide Plastics Company, Division of Union Carbide Corp., 270 Park Avenue, New York 17, N. Y. *In Canada,* Union Carbide Canada Limited, Toronto 12.

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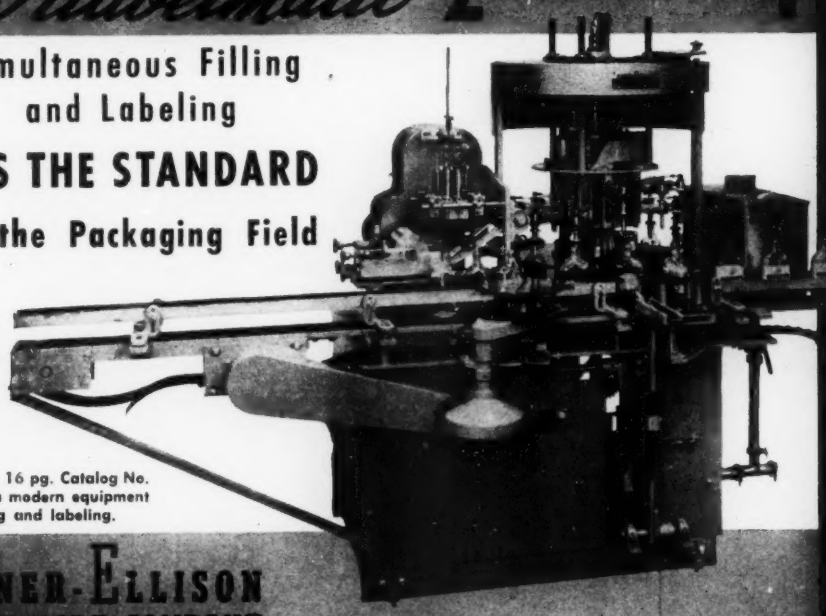
The *Filabelmatic* 2 OPERATIONS IN 1

Simultaneous Filling and Labeling

**IT'S THE STANDARD**

**of the Packaging Field**



- Handles labels from 1" square to 5½" wide and to 6" high.
- Maximum Speed for filling and labeling 60 bottles per minute on 12 filling tubes.
- Handles Bottles one ounce to one gallon.
- Variations from 5 to 60 bottles per minute through the compact; efficient Vari-Drive unit.
- No bottle, no fill. No bottle, no label.
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Send for 16 pg. Catalog No. M-60 on modern equipment for filling and labeling.

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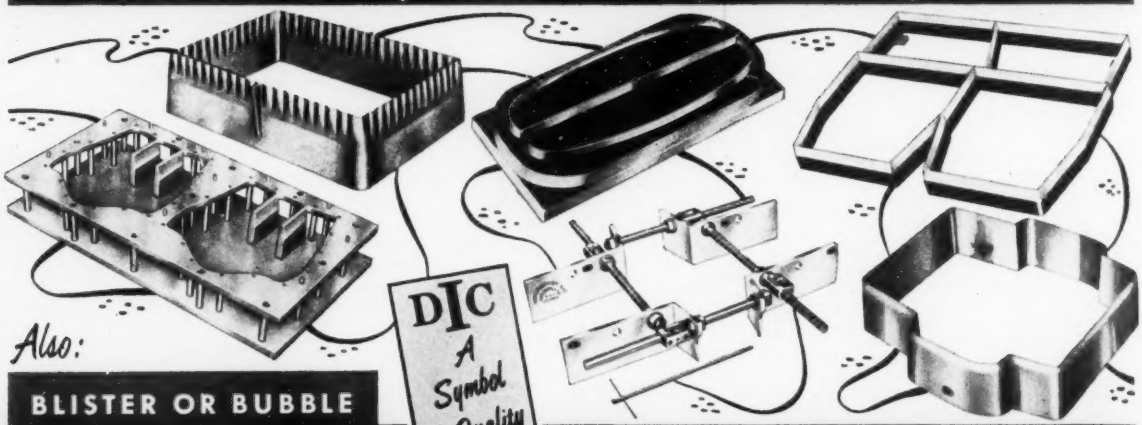

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**Consider the possibilities of crystal clear flexible vinyl...**

ZIPPER BAG
PRESTITE CLOSURE
*Self Seal / Re-open*
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**FREE TEST SAMPLE FROM**

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RICHMOND 7-5329


## Plants & People

[*Continued from page 128*]

packages for frozen foods, dairy products, baked goods, meats and shortenings, is scheduled for mid-summer.

**John A. Gale** is the new partner of the recently incorporated **Scharfenberg, Polivka & Gale,** Minneapolis industrial designer. Packaging will play a major role in the future of the new firm, according to the announcement.

*McClure*

**Eugene S. McClure** becomes rotogravure sales mgr. for **Rap-In-Wax Co.,** Minneapolis. His duties will be national in scope and will include supervision of special accounts where company rotogravure printing facilities are being used in packaging applications. Mr. McClure comes to Rap-In-Wax from **Forbes Lithograph Mfg. Co.,** Boston.

**The Champion Paper & Fibre Co.,** Hamilton, O., has announced the resignation of **Reuben B. Robertson** from the board. The directors of the company have re-appointed Mr. Robertson as a director emeritus. He also continues as honorary chairman. **Dr. Logan T. Robertson** follows his father and brother, the late **Reuben B. Robertson, Jr.,** onto Champion's board.

**Boyertown Packaging Service Corp.,** Boyertown, Pa., has appointed **Linwood J. Fry** as v.p. in charge of operations and **Ralph N. March** as v.p. in charge of sales. The company is a converter of packaging materials.

*Lousin*

**Sun Chemical Corp.,** New York, names **Max Lousin** as rotogravure and flexographic national product mgr. He will be available, says the company, for advice and consultation on all phases of Sun's flexographic and rotogravure activities. Mr. Lousin's headquarters are at the company's Graphic Arts Group offices which are located in Chicago.

**Jack N. Porterfield** has formed a new company, **Pre-Development Corp.,** in Wheat Ridge, Colo. Mr. Porterfield is pres. of the new set-up. Promotion of the strip casting of aluminum for sheet stock, foil, sheet, or strip for deep drawing; automated lines for extruded cans, drawn cans, three-piece, laminated foil and capacitor cans, and collapsible tubes will be the first concern of Pre-Development Corp.

New v.p. of production for **U. S. Industrial Chemicals Co., Div. National Distillers & Chemical Corp.,** New York, is **Paul J. LaMarche.** Director of production since 1958, Mr. LaMarche joined USI in 1949.

**Federal Tool Corp.,** Lincolnwood, Ill., has merged with **Proven Products, Inc.,** and **Federal Premium Service, Inc.,**


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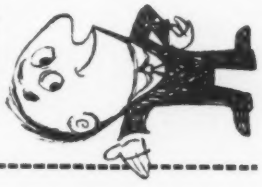

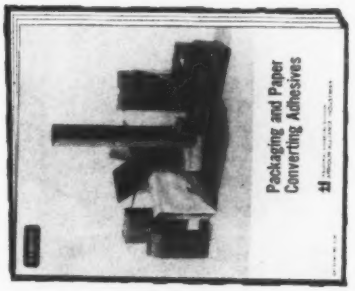


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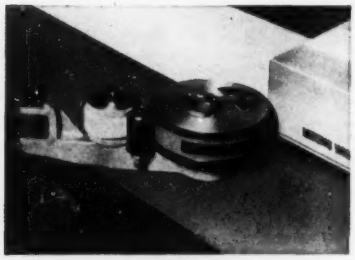
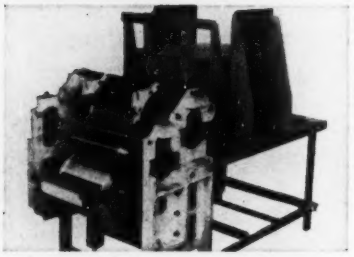
Armour's new Packaging and Paper Converting Adhesives Catalog is packed with new information that will help you get more out of your Adhesives dollar. Clearly organized by type of packaging and paper converting operation, this new technical bulletin includes the latest operating data as well as comprehensive physical and chemical properties.

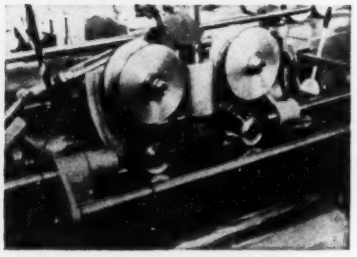
# Make these IME machines your standard for comparison in marking, dating and coding equipment



**WHIPPET MARKER®** automates imprinting of conveyor-carried containers of all types. Driven by the conveyor and self-inking, it marks your containers as you use them. Attaches easily to any conveyor line.



**#7 AUTOPRINTER®** automatically imprints one or both sides of cartons and multi wall bags at speeds up to 3000 per hour. Prints clear impressions on any flat, absorbent surface regardless of minor surface variations.



**RAINBOW CODER®** offers you a wide color range in sharp, clear, controlled impressions on any surface that will accept hot roll leaf imprinting. Designed to be synchronized with speed of the packaging machine, it requires no operator, no ink, no makeready and very little maintenance.

Before you buy any marking or imprinting machine be sure to check on the I. M. E. line. These machines set the standards...for speed...for versatility...for rugged durability . . . for accurate, clear imprinting. You can find cheaper machines, but you can't find better dollar-for-dollar value in long-run economy and trouble-free, efficient service! Write today for our new catalog — it's yours for the asking. Department M.P.

**UNUSUAL PROBLEM?** If you have a special problem in product handling or identification, remember this: IME offers complete design and engineering services.

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## Plants & People [*Cont'd*]

both of Skokie, Ill. The three plastics firms are now consolidated under the name of **Fedco Corp.** The new organization will offer products for packaging, according to **J. R. Tobin,** new pres. and chief exec. officer. **Rudolph Bernhardt** has been elected chairman of the board and senior officer.

**Otto G. Direnga** has been named director of research administration for the **General Chemical Div., Allied Chemical Corp.,** New York. **Walter G. King, Jr.,** succeeds him as director of planning research. The duties of asst. director of planning research have been assumed by **Charles D. Boyer, Jr.,** former mgr. of engineering research.

**Dr. Robert S. Holdsworth** has joined the **Dewey & Almy Chemical Div.** of **W. R. Grace & Co.,** Cambridge, Mass., as mgr. of the can-sealing-compound research laboratory. **James T. Keefe, Jr.,** has been named sales mgr. of Dewey & Almy's newly created General Printing Products Dept.

**Inpak Systems, Inc.,** New York, has named **Nathan M. Shippee** as pres. and chief exec. officer. He succeeds **Edward Thiele,** who has moved up to the post of chairman of the board. Mr. Shippee formerly served as exec. v.p. of the company. Inpak Systems' services include the creation of packages from new and existing materials, as well as the design and production of special packaging equipment.

*Shippee* *Thiele*

**Thomas H. McConnell, Jr.,** succeeds **C. E. Carpenter** as pres. of **Packaging Materials Corp.,** New York, industrial packaging materials. Mr. Carpenter has resigned to devote himself to other business activities.

**James M. Deegan** has joined **Cello-Foil Products, Inc.,** Battle Creek, Mich., as national account executive—a newly created post. He was formerly sales mgr. of transparent products for **The Dobeckmun Co., Div. of Dow Chemical Co.** He is now responsible for marketing evaluation and sales coordination.

A plant expansion and modernization program is under way at the **Bemis Bro. Bag Co.,** St. Louis. The program includes a new plant near Muskegon, Mich., and facility expansions in St. Louis, New Hampshire, New Jersey and Washington. Much of the expenditure will be for new paper-making and bag-converting equipment.

Construction has started on the new research center for **Ludlow Corp.,** Needham Heights, Mass. The new facility will be a three-level addition to company headquarters and will de-

velop new and improved paper and plastic products for packaging and textile customers.

As part of the company's silver-anniversary expansion program, **Avery Label Co.**, Monrovia, Calif., recently dedicated a new pressure-sensitive-label manufacturing plant in North Brunswick, N.J., marking the second expansion of East Coast facilities in the past four years. The firm has also opened a new plant in Cleveland. Avery has moved its Chicago offices to the London Guaranty Bldg. at 360 N. Michigan Avenue.

Manufacturing capacity of the Millville, N. J., glass-container plant of **Armstrong Cork Co.**, Lancaster, Pa., is being substantially increased.

Four million sq. ft. of corrugated board every 24 hours is the reported capacity of the newly opened Los Angeles corrugated-box plant of **National Container Corp. of California**, a sub. of **Owens-Illinois Glass Co.**

**Tee-Pak, Inc.**, Chicago, cellulose-casing manufacturer, is constructing a 10,000-sq.-ft. research-development center adjacent to its Danville, Ill., plant. The company plans to centralize all research activities at the new facility.

Operations are under way at the new St. Louis corrugated-container plant of the Packaging Div. of **Olin Mathieson Chemical Corp.** The facility has a capacity of 25 million sq. ft. of corrugated containers per year.

**Irv Koons Associates** has announced a change of address to 8 E. 48 St., New York 17. The firm does packaging and industrial design.

**Foam Flex Corp.**, New York, has granted a license to **Urethane Systems Engineering, Inc.**, of Willow Grove, Pa., to make equipment to produce continuous rigid urethane foam sandwich panels and flexible cushioning materials by the Foam-Flex process.

New headquarters for **The House of Harley, Inc.**, are at 10 E. 40 St., New York 16. **The House of Harley Printing Co.** continues to operate from its downtown plant at 34 Hubert St.

**Soabar Co.**, Philadelphia, is building new headquarters at 7722 Dungen Rd. Manufacturing facilities and administrative operations will be transferred early in 1961.

**Ivers-Lee Co.**, Newark, producer of unit packaging, has opened a 20,000-sq.-ft. plant adjacent to company headquarters. Equipped with new machinery, the facility will specialize in liquid and cream filling.

**American Viscose Corp.**, Philadelphia, has opened the first Southwestern sales offices for its new Industrial Packaging Dept. in Dallas. **Philip Raley** has been named to the post of district mgr. Major products of the dept. is Avistrap high-tenacity rayon cord strapping.

**Economic Machinery Co.**, Worcester, Mass., has been appointed exclusive


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*for the* FOOD, COSMETIC *and* DRUG *industries*

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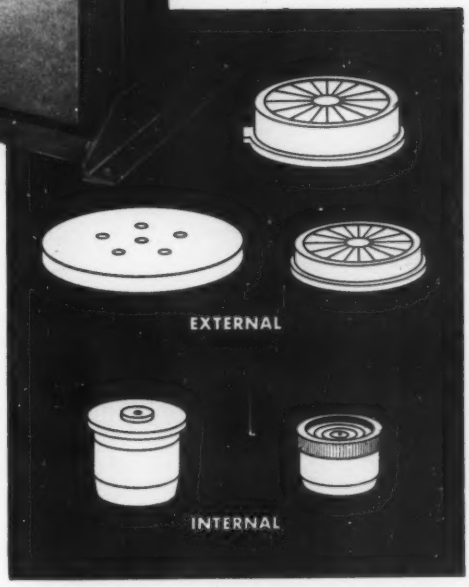


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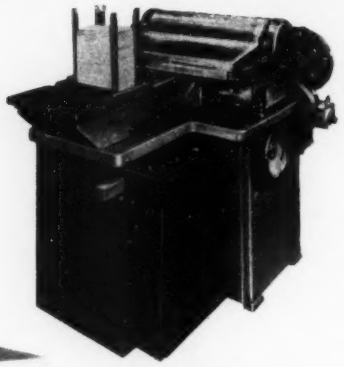

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## Plants & People [*Cont'd*]

sales and service agent throughout the world (except Canada) for the packaging-machinery line manufactured by **Packer Machinery Co.**, Brooklyn.

Work is in progress on expansion of the Research Laboratory at the Milford, N.J., mill of **Riegel Paper Corp.**, New York. Facilities for testing packaging materials are being enlarged to accommodate increased research on current problems related to food and food packaging.

**Florsheim Mfg. Co.**, Chicago, has moved to new quarters at 1440 W. Van Buren St. The company makes plastic food containers.

**Van Christo** has opened a new design office in Boston. Creative services in several design areas, including package design, product design, and industrial design are being offered by his new firm, **Van Christo Associates**, located at 330 Stuart St.

### Promotions

**E. Vaughn Deal**: to mktg. mgr., poultry and dairy products, **Cryovac Div., W. R. Grace & Co.**, Cambridge, Mass.

**William Disbrow**: to regional industrial relations mgr., Chicago, **St. Regis Paper Co.**, New York.

**J. A. Bousquet**: to mgr., Eastern region, **Gaylord Container Corp.**, St. Louis, div. of **Crown Zellerbach Corp.** He will be in charge of the Jersey City plant and sales in the New York national accounts office. **Theodore M. Wilkie**: to national accounts exec., New York.

**Charles Paist**: to Eastern sales mgr., folding-carton div., New York, **St. Regis Paper Co.**, New York. **T. L. Seith**: to sales mgr., Midwest district, container division.

**Fred R. Barlow**: to v.p., sales and marketing div., **Plastic Materials & Polymers, Inc.**, Hicksville, N. Y.

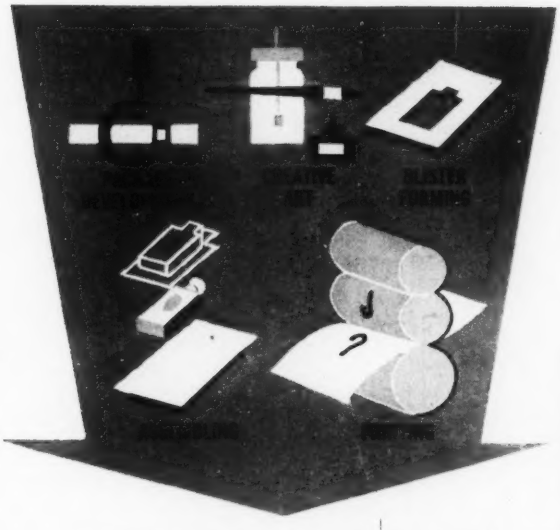
**Richard A. Ehlers**: to asst. mgr., frozen-food packaging, **Western-Waxide Div., Crown Zellerbach Corp.**, San Leandro, Calif.

**Joseph J. Winer**: to asst. to the pres., a newly created post, **Puritan Aerosol Corp.**, Boston.

**Gordon Bonfield, Jr.**: to gen. sales mgr., Central region, container div., Wausau, Wis., **Packaging Corp. of America**, Evanston, Ill. **John A. Oakes**: to gen. sales mgr., paperboard div., Central region, Grand Rapids.

**William C. Carson**: to mgr., northern New Jersey sales district, **Metal Edge Industries**, Barrington, N. J. **Warren E. Slusser**: to mgr., western Pennsylvania-Ohio area.

**Sam H. Zutler**: to sales mgr., Saran Wrap-S products, **The Dobeckmun Co.**, Cleveland, div. of **The Dow Chemical**



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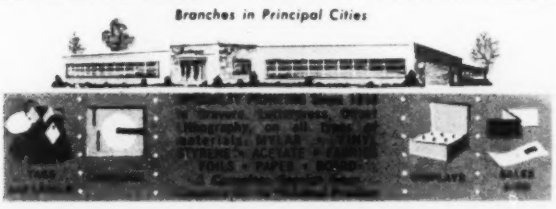

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- **Engineered by specialists in industrial automatic controls.**

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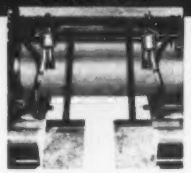
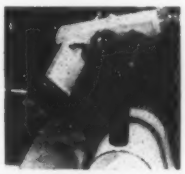
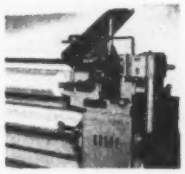
**43 MODELS**
*...one just right for your job!*



Medium-duty model with air sensing, positioning knives on rubber calender.



Photoelectric reflected light head following line on printed carton stock to eliminate slitting.



Light-duty unit with air sensing, applied to textile machinery.

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**HYTRONIC® Cutting Machines break the bottleneck between vacuum-forming and assembly.**

Cutting apart the vacuum formed cavities has plagued companies using plastic bubble packaging.

Now, the Hytronic Cutting Machine by United Shoe Machinery Corporation brings new efficiency to this cutting operation, making operations between forming and assembly faster and far less costly.

The Hytronic Cutting Machine, with hydraulic power and electronic control, will cut single sheets or stacks without adjustment. It will use dies of varying heights interchangeably. Setup time is eliminated, and many medium-run jobs can be done in the time needed to get other cutting machines ready.

Industry leaders, both in plant operations like that at Carters Ink Company and in contract shops like Wespak, Inc. of Chicopee, Mass., have found the Hytronic Cutting Machine the only economical way to bring the speed of cutting blister packaging units in line with forming and packaging operations.

Fact sheets are available that tell how many other companies have profited with the Hytronic Cutting Machine. Available for sale or lease. Phone for a trial today.

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## Plants & People [*Cont'd*]

**Co. Russell K. Canfield:** to mgr., New York district sales. He succeeds **W. C. Dougan**, now regional sales manager.

**L. A. Rowden:** to sales mgr., Omaha div., **Bemis Bro. Bag Co.**, St. Louis.

**Paul A. Florian:** to v.p., **Miehle-Goss-Dexter, Inc.**, Chicago. He is now responsible for coordination of planning activities of the firm's divisions and subsidiaries. The company makes graphic-arts equipment.

**Dennis E. Spydell:** to v.p., **Dumont, Inc.**, Englewood, N. J. **Kenneth B. Dunning:** to director. **Richard C. Ransom:** to mktg. mgr. The company is a contract packager.

### Appointments

**William H. Sims:** from **Kaiser Aluminum** to district mgr., Chicago, **Johnston Foil Div., Standard Packaging Corp.**, New York.

**John K. Quinn:** from **Risdon Mfg. Co.** to sales mgr., New England and New York State, **Oil Equipment Laboratories, Inc.**, Elizabeth, N. J. He will handle valve sales as well as custom plastic molding for the company's recently acquired sub., **Wagner Plastic Corp.** O. E. L. makes aerosol valves for foams, sprays and liquids.

**Edward T. Turner, Jr.:** from **Diamond National Corp.** to director of technical services, **The Weston Paper & Mfg. Co.**, Terre Haute, Ind.

**Franklin C. Callison:** from **Campbell Box & Tag Co.** to gen. mgr., **Cedar Rapids Carton Co.**, Cedar Rapids, Iowa. **Ruth Kubias:** to asst. gen. mgr.

**G. Blake Sabine:** to sales mgr., package cushioning and test equipment, **Hardigg Industries**, South Hadley Falls, Mass.

### Obituaries

**Walter Dorwin Teague**, industrial and package designer, is dead at the age of 76. Mr. Teague, whose design credits ranged from consumer packages to buildings, served as design consultant to many large companies, including A. B. Dick, Eastman Kodak, General Foods and Procter & Gamble. He founded the firm of Walter Dorwin Teague Associates, New York, in 1926. At the time of his death he was its senior partner. Mr. Teague was a past pres. of the **American Institute of Graphic Arts** and first pres. of the **American Society of Industrial Engineers**. He also was the author of several books on design.

**Louis S. Beale**, 71, secy.-treas. and mgr. of the **Wirebound Box Mfrs. Assn.** since 1941, died Nov. 10 in Lake Forest, Ill. Widely known in the packaging and material-handling fields, Mr. Beale also was treas. of the **Society of Packaging & Handling Engineers.**

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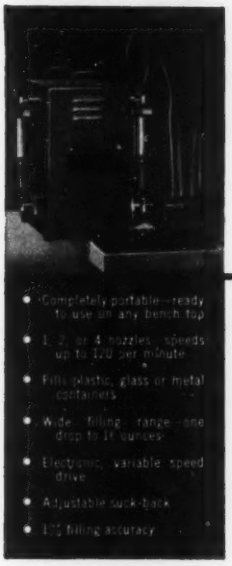

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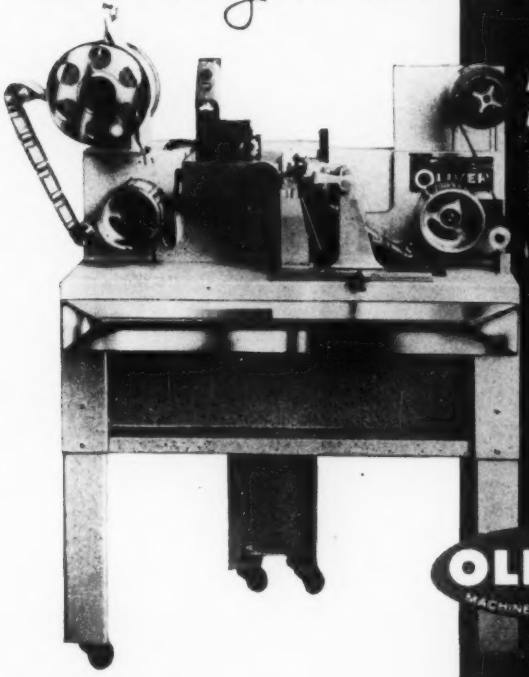
*announcing the new* **OLIVER '900' IMPRINTER**



***faster output, improved quality in-plant label imprinting!***

Now, imprint your own roll-type labels right in your plant — when you want them and in the quantity needed. The new Oliver No. 900 assures you of fine quality imprinting, plus rewind operation for later mechanical application, or cut-stack optional feature for hand application. An entirely different form of label imprinting device utilizes a constant source of ink supply pot and rotary feed print segment. Imprints 200 labels per minute. Takes labels 1¼" high by 1" wide, minimum; 3" high by 5" wide, maximum. You can control your label inventory with the Oliver No. 900: overcome "outside printing" scheduling problems, eliminate waste from obsolete imprints.

*Write for information and free folder.*

**OLIVER** MACHINERY COMPANY
PACKAGING DIVISION Grand Rapids 2, Michigan

*Understanding the packaging problem completely is to know how to solve it properly. That's why Triangle invests so many man hours in Preliminary Engineering. We do it to make a proposal just as carefully as before engineering a machine already on order. As a result you can depend on the equipment you're ordering, and we can guarantee it.*

# Will your next packaging machine perform as well as Oh Henry's?

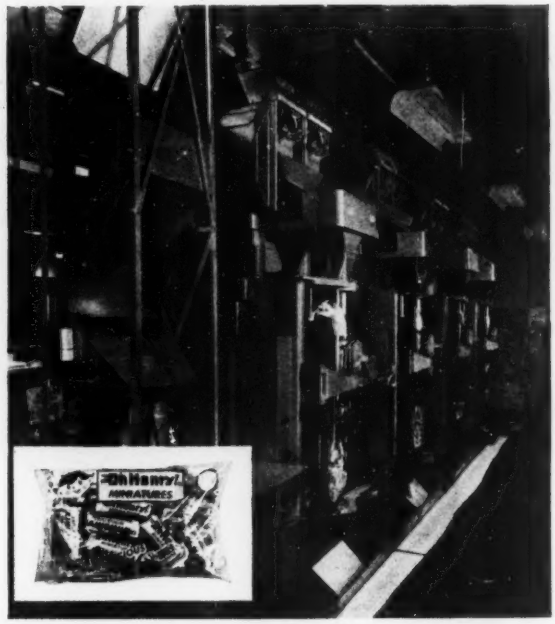
It will *if* the machinery builder is able to understand your particular packaging needs as well as Triangle understood those at Williamson Candy Company, Chicago, Illinois.

Whether you want to package miniature Oh Henry candy bars in poly bags or not, Triangle's consideration of *your needs* always begins in Preliminary Engineering. Everything that relates to the situation is analyzed and fitted into its proper place. The result is an outline of needs so complete as to permit the most practical, direct solution.

In this instance, both Williamson and Triangle knew specifically what was needed—type of machine . . . how fast it would operate . . . floor space requirements . . . how quickly the investment would be amortized—all was determined in advance.

The machine that satisfied all requirements was the Triangle single tube Bag Maker and Filler. The four machine installation is equipped with Elec-Tri-Pak scales for high speed, accurate, fully automatic operation. This remarkable single tube machine is also available as a twin, featuring independent operation of either tube.

*Like so many other users of Triangle machines, Williamson Candy Company already knows what we want to show you. Why not write for our free brochure, "A Story About People, Packaging and Profit." It tells why you can depend on Triangle.*




*Williamson Candy Company uses a battery of Triangle Bag Maker and Filler machines to automatically package miniature Oh Henry candy bars in 7, 9, and 14 oz. printed polyethylene.*

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Many of today's most successful packages are Milprint *custom combinations* of several materials designed specifically to product needs. At Milprint no particular packaging material or printing process is favored because *Milprint offers you the widest variety available anywhere.* This "open mind" approach by America's pioneer in flexible packaging can give your product a better package at economical cost. Call us and let us prove . . .

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MILPRINT INC., World's Most Advanced Flexible Packaging Service. General Offices, Milwaukee, Wis., Sales Offices and plants conveniently located across the nation.

# EQUIPMENT & MATERIALS

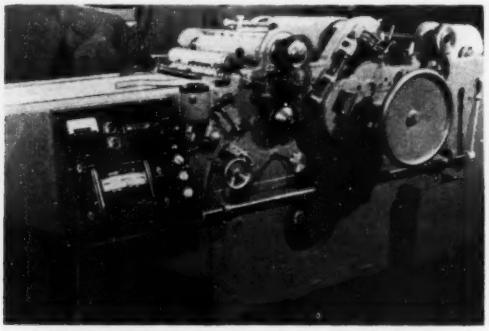
[*Continued from page 46*]
junction with hot or cold adhesives, glue patterns can be suited to individual requirements and various types of seals can be effected. A reclosable telescoping hinged cover is one of the carton features made possible by the machine, says its supplier. *Package Forming Machinery Co., Ltd., 26 Lipton Ave., Toronto 6, Canada.*

### New high-density polyethylene bottles

Plax has added three new high-density polyethylene bottles to its stock line. Each is a different, stylish shape, designed for easy handling, labeling and dispensing. The lightweight, break-resistant bottles are suggested for such liquid products as detergents, polishes, waxes and other household chemicals. The new stock containers are: the Princess (in 32-, 22-, 16- and 12-oz. sizes), the Terraced Oval (in 16- and 12-oz. sizes) and the Cameo (in 32-, 22-, 16- and 12-oz. sizes). For detailed information, contact *Plax Corp., P. O. Box 1019, Hartford, Conn.*

### Polyethylene bags from tubing

The Poly-200 is Conapac's high-speed, heavy-duty machine for making bags from flat or gusseted polyethylene tubing. The machine operates with a rotary motion for constant film travel. It can accommodate flat or gusseted film tubing up to 16 in. face width, producing finished bags ranging in



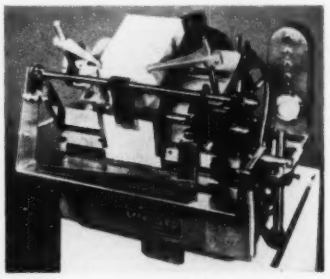
length from 6 to 24 in. Bag length is controlled by a variable-speed drive which offers infinite variation within the size range. According to the company, bag-making speeds up to 200 per minute can be achieved. However, the supplier adds, output can be doubled if twin webs up to 7 in. wide each are run on the machine. Optional features of the new unit (which occupies floor space of 4 by 10 ft.) are a perforator, center-seaming arrangement and provision for attaching a tail-end printer. A standard feature is a stacker for delivering bags in neat, shingle-style piles. *Conapac Corp., 120 E. 13 St., New York 3.*

### Continuous double-flange forming

Said to be capable of folding up to 3,000 blisters per hour is Tronomatic's new continuous plastic double-flange forming machine, Model C. It makes 90 or 180 deg. flanges on any thermoplastic material 0.005 in. thick or thicker. It folds blisters to accommodate backing cards up to ⅛ in. thick and ranging in width from 1¼ to 14 in. Folding is performed as the plastic moves across a pair of heated die bars. The machine can be adjusted for variations in flange and fold-over requirements. According to the supplier, the machine's high output rate is made possible by: (1) variable-speed drive; (2) constant heating of blister edges as they are folded, at all points along the forming die bar, and (3) dual thermostatic controls that assure precise heat transfer at desired temperature. *Tronomatic Machine Mfg. Corp., 25 Bruckner Blvd., New York 54.*

### Label sealer with bag holder

A new attachment that automatically holds a flexible bag while it is being sealed with a header label is available from Mercury Heat Sealing. The device, offered as optional equipment with the supplier's VLS-12 bag sealer, frees the operator's hands as soon as he positions the package in front of the machine. The bag is gripped by the holding device while the top is folded and sealed and the header label is attached. The sealed bag then is ejected automatically. Use of the new attachment, says the supplier, increases production speed as much as 50% by eliminating the manual bag-holding operation. The machine will accommodate any flexible-film bag up to 12 in. wide, attaching header labels up to 6 in. high and 10½ in. wide. *Mercury Heat Sealing Equipment Co., 2601 N. Howard St., Philadelphia 34.*



### Corrosion-preventive polyester film

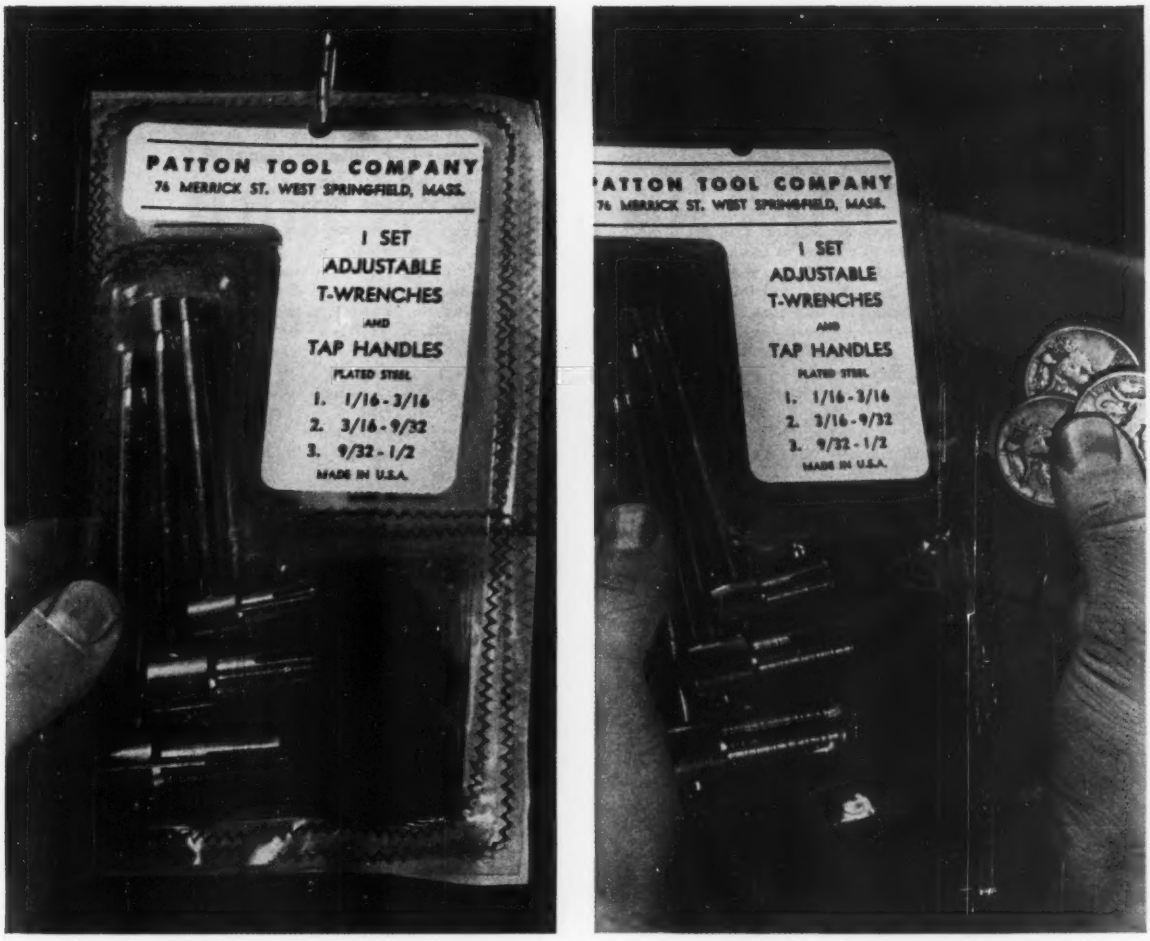
Available in roll stock or pouch form is a heat-sealable polyester packaging material treated with a volatile corrosion inhibitor. Marketed by Daubert's Nox-Rust Div. as Nox-Rust Clear-Pak, the material protects ferrous-metal parts and components from rust and corrosion by releasing an invisible vapor into the atmosphere within the package. (See "The Volatile Corrosion Inhibitors," MODERN PACKAGING, Nov., 1960, p. 116). Addition of the VCI in no way affects the film's sparkling clarity, says the supplier. The factor of clarity, the company points out, permits easy identification of packaged items by consumers or warehouse workers. Polyester was selected as the packaging medium because of its inherent property as a barrier to corrosive hydrogen-sulfide vapors, the company adds. *Daubert Chemical Co., Nox-Rust Div., 4700 S. Central Ave., Chicago 38.*

### Safety feature on aerosol test tank

An exclusive safety addition is a new optional feature of Island Equipment's aerosol heat and leak test tank. The addition consists of a stainless-steel inspection hood with shatterproof safety-glass sliding doors on one side and solid metal sheet on the other side. Blowers can be installed to de-fog the glass doors for clear visibility of aerosol containers passing through the tank. *Island Equipment Corp., P.O. Box 38-276, Miami 38, Fla.*

### Bottle-neck labeling machine

Designed to take advantage of new developments in thermoplastic adhesives is Gisholt's Masterline Neckwrap Labeler. For use with heat-sealable labels only, it reportedly will apply paper wrap-around labels to bottle necks automatically at speeds up to 180 per minute. Speeds within this range are adjustable, even while the machine is running. Delayed-action heat-sealing is employed, with heat applied directly to the adhesive side of the label. This feature, the supplier notes, permits an almost unlimited choice of papers, foils, inks and embossings, with no possibility of destroying design, no "picker" marks on labels and no bar spots. It also guarantees perfect adhesion of the label surface to the bottle, says the firm. Because of the machine's continuous-action operation, bottle control is smooth, enabling the unit to accommodate lightweight glass containers. Other features

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cited for the new unit are: complete label-positioning control, rapid change-over and versatility (round, square or flask bottles, ranging in height and width, and in capacity from ½ pt. to 1 qt., can be accommodated). For more information, contact *Gisholt Machine Co., Madison 10, Wis.*

### Aluminum-can extrusion machine

From Verson Allsteel Press comes a moderately priced horizontal extrusion machine for the manufacture of aluminum cans. Designed to operate at more than 200 strokes per minute, the new unit extrudes the can in a single stroke from a slug 2.6 in. in diameter and 0.164 in. thick. The hopper-fed press is rated at 400 tons. The extrusion machine turns out completely formed cans, except for rolling of the lips, which is done on a separate unit. The supplier suggests use of the new machine by canners who wish to combine the advantages of aluminum containers with the economy and convenience of on-premises can manufacture. For details, contact *Verson Allsteel Press Co., 9300 S. Kenwood Ave., Chicago 19.*

### Polyethylene retail bags for sugar

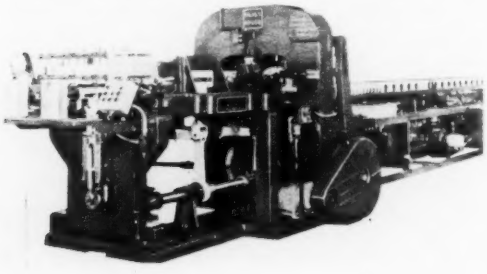
Polyethylene sugar bags in retail sizes are now commercially available from Chase Bag. Development of the Polytex bag (in 2-, 2½-, 3- and 5-lb. sizes) follows a 6-month program of design work and marketing research. According to the supplier, advantages of the polyethylene bag for sugar include superior, longer-lasting moisture protection (which eliminates caking and hardening), product visibility and visual appeal of package design in up to six colors. In addition, the company notes, the flexibility and compactness of the film bag reduce storage and shelf-space requirements in the store and in the home. For retail requirements, the product name can be printed on the sides as well as on the front of the bag, to permit lengthwise stacking without loss of identification. The polyethylene-film material is available as pre-formed bags or as printed roll stock. *Chase Bag Co., 355 Lexington Ave., New York 17.*

### Two imprinting attachments

New from Gottscho are a variable-size imprinting attachment for strip-packaging machines and an automatic continuous imprinting attachment for use on almost any kind of material. The first of these is the Model 780 Rolaprinter, which imprints areas up to 10 in. across webs of film, foil and paper. Designed for imprinting codes and other legends on heat-sealed unit packs, it uses a heat-resistant fluid ink which reportedly withstands heat sealing and will not rub off on sealing rolls. The other new attachment, the 900-H Rolaprinter, can be mounted on winding, coating and other processing machines in which material is handled in continuous web or sheet form. The rotary-action device will imprint areas ranging from 1 to 36 in. wide on paper, board, plastics, fabric, metal and many other materials. Added data are offered by *Adolph Gottscho, Inc., Hillside, N.J.*

### High-speed can-bodymaker

Claimed to be 60% faster than any previous can-bodymaking machine is Bliss' new Model 014. The automatic unit reportedly will produce up to 60 rectangular 2- or 2½-gal. metal cans per minute. According to the manufacturer, these higher speeds are made possible by important design features in the bodymaker's forming section: improved gauging, an overhead clamp which positions and holds the body blank at the forming station and a smooth overhead cam drive for the forming wings. Body-blank feeding is done automatically from the magazine stack onto feed bars by vacuum-operated suction cups. The magazine is adjustable for all body-blank sizes within the machine's range. For details, contact *E. W. Bliss Co., Canton 10, O.*

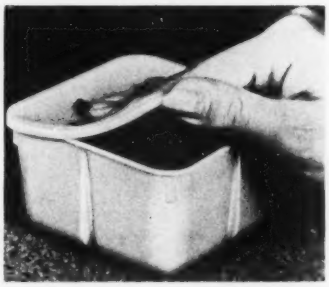


### Versatile vacuum former

Pacific Plastic Machinery introduces a vacuum-forming machine that reportedly will produce quality parts via vacuum forming, vacuum drape forming or drape plug assist forming, in addition to three positions for skin packaging. Called the Model V, it is available in these standard mold sizes: 20 by 25 in., 24 by 34 in., 34 by 42 in. and 42 by 72 in. Materials can be fed into the machine manually for small runs or automatically (through accessory roll and sheet feeders) for high production. All functions are operated by one eight-position switch. For additional details on this equipment, contact *Pacific Plastic Machinery, Inc., 3443 S. Lawndale St., Chicago 23.*

### New plastic dairy container

Polar Container Corp. has developed a square-shaped plastic container for dairy-food specialties. The company is now offering 15- and 16-oz. containers, with plans under way to make 8-, 12-, 24-, 32- and 64-oz. sizes. One standard size of lid fits all containers, since larger-capacity sizes are made by increasing container depth rather than width. This feature, the supplier points out, provides substantial savings for food processors in material outlay, inventory space, labor costs and production time. The square-shaped container also occupies 20% less space than round containers of equal capacity. Featuring semi-rigid construction and snap-fit lid, the reusable container also is claimed to be leakproof and stackable. The new container is available in four plastic materials: polyethylene, high-impact polystyrene (in blue and yellow colors), clear regular polystyrene and polypropylene. It is manufactured for Polar by the Garmold Plastics Div. of Container Corp. of America. *Polar Container Corp., 625 W. Diversey St., Chicago.*



### Reclamation of aluminum-foil scrap

U. S. By-Products Corp., set up to reclaim metal from laminated aluminum-foil scrap, now reports that it is able to handle all combinations of aluminum foil with paper (waxed or lacquered), cellophane, Mylar and polyethylene, excepting only foil laminating to boxboard and foil laminated to paperboard. For details, contact *U. S. By-Products Corp., 15 & Eastern Ave., Kansas City 26, Mo.*

### Tough polystyrene for thin-wall items

Union Carbide Plastics reports the development of a class of medium-impact polystyrenes for injection molding. The new material, Bakelite TMD-9020, is claimed to offer much higher usable strength and toughness in thin-wall containers than do conventional medium-impact polystyrenes. In ball-drop tests, says the supplier, the thin-wall containers demonstrate unusual strength not only at room temperature but even at —20 deg. F. In flexural tests, the material resists failure under more than twice the load required to break conventional medium-impact specimens, the company adds. Current price of TMD-9020 is 26 cents per lb. It is offered [*Continued on page 148*]

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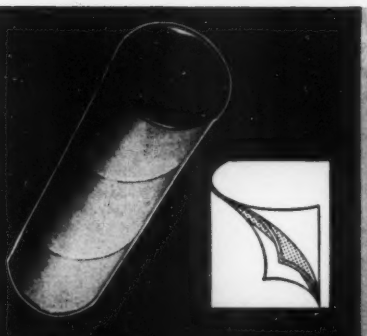
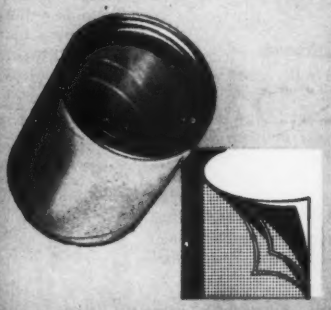


LARDPAK* LINER.
Lardpak liner inside, then fibre, and printed Lardpak paper used outside. A grease barrier for scores of materials. Example of use: caulking compounds.



*LARDPAK, PITCH-BACKED.
This combination offers the packer both grease and moisture resistance. Example of use: various chemicals.

# • There are many sides

## to the R. C. FIBRE CAN Packaging Story

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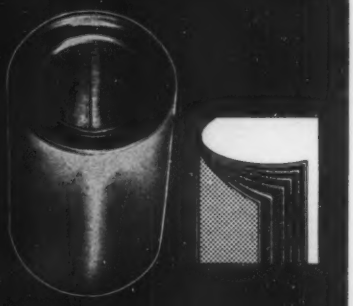

CHIP KB.
Pitch layers between layers of fibre, for moisture resistance. Convolute can shown here. Example of use: wallpaper cleaner, cold water paints.

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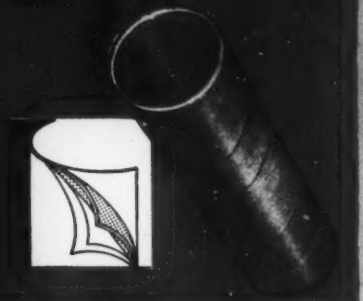

PARAFFIN COATING.
Paraffin lining obtained two ways: spiral wound from coated fibre, or sprayed in convolute can. Example of use: moth crystals, drugs, etc.

FOIL PAPER-BACKED.
Foil backed up by 20 lb. white bond paper, which serves as inside ply of container. Ideal for packaging that requires both moisture and grease resistance. Example of use: ready-to-heat biscuits, and similar food products.

* Rhinelander Paper Co.

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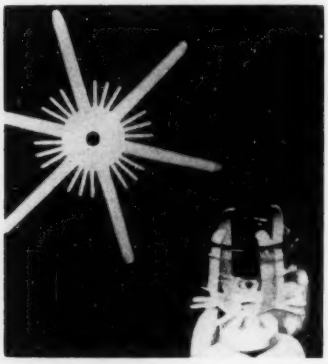
in natural translucent form and in pastel and opaque colors. For more information, contact *Union Carbide Corp., Union Carbide Plastics Div., 270 Park Ave., New York.*

### Polyethylene-coated ½-gal. cartons

Polyethylene-coated ½-gal. paperboard milk cartons have been introduced by American Can and by Sealright. Canco's new carton, coated inside and out for maximum product protection, features an easy-opening and pouring device. Construction of the container's top is designed to facilitate stacking in retail dairy cases. The containers are shipped knocked-down. They can be formed, filled, sealed and cased on Canco-supplied equipment. Sealright's new ½-gal. milk carton, called Sealking, features polyethylene welds at the top, bottom and sides, for sturdy construction. It also incorporates an aluminum-foil opening that protects the corner-pouring surface. Wide-vent opening on the pour spout is said to eliminate gushing action. The carton's flat top eases stacking and provides a larger area for dairy and brand identification. *American Can Co., 100 Park Ave., New York 17, and Sealright Co., Fulton, N.Y.*

### Polyethylene bottle insert

A star-shaped flexible polyethylene device, designed to replace cotton as wadding in the headspace of glass or other tablet containers, is being offered by John Dale, Ltd. The Swedish-made "Cerbo Star," as it is called, is offered in a variety of sizes. Each of the standard sizes incorporates sufficient tolerance to enable its use in varying sizes of container or in containers made from various materials, says the supplier. The low-cost item may be inserted manually or automatically. The long, flexible "arms" of the insert enable it to retain its wadding property even after partial removal of the contents, the company points out. *John Dale, Ltd., Brunswick Park Rd., London N. 11, England.*



### Foil-lined cake tray

Marathon's Pak-A-Pan is a bake-in, sell-in pan package for cake products. The new container is a tapered, foil-lined paperboard tray with raised corners and a rectangular center post. The cake is baked, film wrapped and sold in the same package. Advantages of the container to bakers, says the supplier, include: elimination of many handling operations; effective product protection, and the opportunity to add a printed design to the white outside panels of the tray. The package also offers appeal and convenience to customers, the firm notes. For details, write to *Marathon, Div. American Can Co., Menasha, Wis.*

### Non-fogging bacon-wrap film

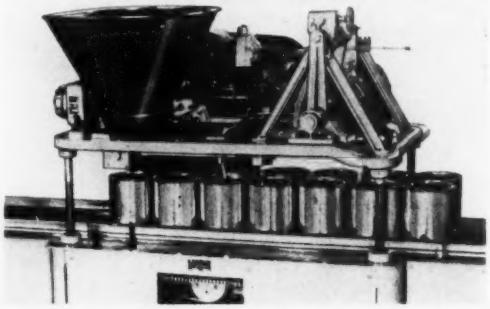
Claimed to be priced as much as 56% under competitive wraps is a new Goodyear packaging film for sliced bacon. The film, called Vitafilm 75WNF-1, offers maximum visibility because of its exceptional clarity and its non-fogging characteristic, says the supplier. Other advantages cited for the material are that it offers a positive heat seal, will not strip open under normal handling and provides a smooth, tight wrap to retain product flavor and freshness. The machinable film reportedly complies with the Food Additives Amendment to the Food Drug & Cosmetic Act. *Goodyear Tire & Rubber Co., Packaging Films Dept., Akron 16, O.*

### Food and dairy filling machine

Multi-fill reports that its new filling machine will fill and seal 120 single-service food or dairy containers per minute. The unit automatically de-nests stacks of pre-formed containers, fills them with liquids or solids and seals them with a sanitary seal that protects the pouring edge. Lily-Tulip Cup Corp. has been named to handle arrangements for leasing the machines to users of its pre-formed single-service containers. *Multi-fill Machine Co., sub. Silver Creek Precision Corp., Silver Creek, N.Y.*

### Twin-head pint-to-gallon filler

Elgin introduces a twin-head filling machine for a wide range of viscous and semi-viscous products. Claimed to combine trouble-free operation and low cost, the new unit



provides two-at-a-time filling for glass or metal containers ranging in capacity from 1 pt. to 1 gal. The piston stroke which governs the amount of fill is adjusted by a single micrometer screw adjusting handle. Upper table assembly can be set quickly for different container heights by a hand wheel. An adjustable bottom-fill mechanism lifts containers over the filling nozzles so that filling occurs as the containers are being lowered. *Elgin Mfg. Co., Elgin, Ill.*

### New thermoforming equipment

Comet Industries offers a new die-cutting press for trimming finished thermoplastic skin or blister packages and a new vacuum-forming machine. The new die-cutting press has as its features large platen area, short, fast stroke and adjustable shut height. It is available in two models: 50-T, with die space of 26 by 36 in., and 75-T, with die space of 36 by 42 in. The new vacuum former, called Blist-O-Matic, incorporates automatic thermoforming and slitting to size. It is capable of forming and trimming items up to 5½ in. high. Full mold area is 24 by 32 in. The new machine is reported to provide for complete and automatic slitting at speeds of 6 to 10 cycles per minute. *Comet Industries, Franklin Park, Ill.*

### Wire-binding and sealing unit

A machine that binds and seals containers of any length with flat steel wire is offered by Metaverpa N.V., Maartensdijk, Holland. The pneumatically powered unit can handle containers with a width and height range of 6 to 27½ in., and an unlimited length range without adjustment, says the company. Tension adjustability allows the machine to accommodate corrugated as well as wooden cases. Design simplicity and minimum moving parts reportedly lower maintenance requirements and assure long service life. For further information about this unit, contact *Netherlands Trade Commission, 581 Fifth Ave., New York.*

### Pictorial ice-cream carton

In a departure from the conventional, Riegel's Bloomer Div. has introduced a high-style stock ice-cream carton. Called the "Silver Series," the colorfully lithographed wrap-around pictorials feature beautiful table settings and are designed to upgrade product appeal. Ten different carton designs are available, each illustrating a different flavor of ice cream against the table-setting background. The pictorial designs are offered on pint and ½-gal. cartons. *Bloomer Div., Riegel Paper Corp., Newark, N.Y.*

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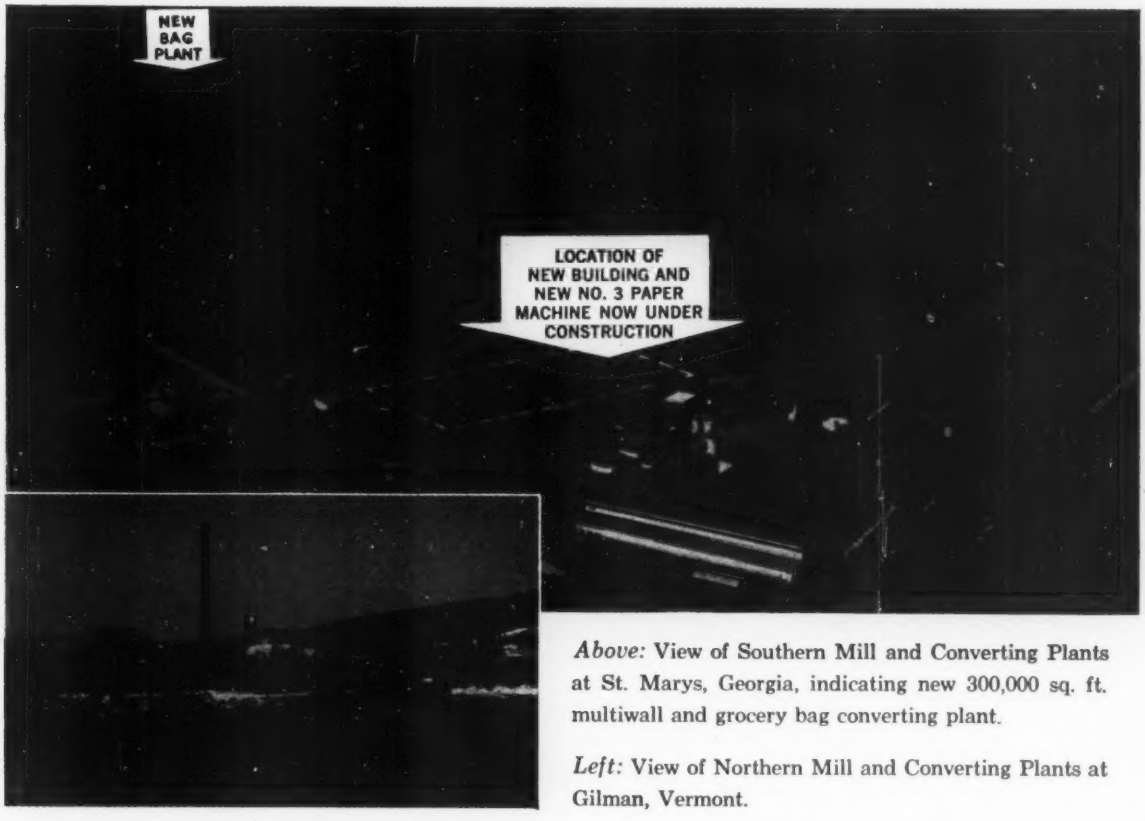


*Above:* View of Southern Mill and Converting Plants at St. Marys, Georgia, indicating new 300,000 sq. ft. multiwall and grocery bag converting plant.

*Left:* View of Northern Mill and Converting Plants at Gilman, Vermont.

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# FOR YOUR INFORMATION

**James W. Field** has been named technical field director of the **Packaging Institute**. Mr. Field comes to PI from the **Technical Assn. of the Pulp & Paper Industry**, where he was in charge of regional activities. Prior to joining TAPPI, he was a chemist with West Virginia Pulp & Paper Company.

*Olsson*

**Sture G. Olsson**, pres. and gen. mgr. of The Chesapeake Corp., was elected pres. of **National Paperboard Assn.** at the group's 28th annual meeting in November. At the same time, **Leo H. Schoenhofen** was named v.p. of the organization. He is senior v.p. of Container Corp of America. **Howard W. Morgan** of the Weyerhaeuser Co. also was elected a v.p. of NPA.

The Hardware Industry Packaging Committee of the **Packaging Institute** reports that a hardware-packaging exposition will be held during this year's **National Hardware Show. The exposition** will present examples of outstanding packages in the hardware field. Preliminary plans call for a "model-store" exhibit, showing packaged hardware on wall and floor display units. For more details, contact E. L. Barringer, Hardware Industry Packaging Committee, Chestnut & 56 Sts., Philadelphia 39.

An expanded, industry-wide program was approved by members of the **Plastic Food Container Assn.** at its second annual meeting in Chicago. The two primary aims of the program were outlined as: improvement of testing methods and production to assure consistent product quality, and a public-relations drive to exploit the great potential of plastic containers in the field of packaging. New pres. of the organization is **W. S. Pinkerton** of Neatway Products. **W. R. Cline** of Mutual Plastic Mold Corp. is v.p.

**Raymond Spilman** is new pres. of the **American Society of Industrial Designers.** He succeeds **Richard S. Latham. William C. Renwick** has been named v.p. Three men chosen as regional v.ps. are: **Samuel Scherr**, Allegheny Chapter; **Reino Aarnio**, New York Chapter, and **Melvin H. Best**, West Coast Chapter.

At the first **Cargo Handling Exposition**, held recently in New York, **St. Regis Paper Co.** (the only paper company participating), presented its "Bulkpak" containerization story, featuring standard corrugated grades as well as wooden wirebound units. Purpose of the exposition was to illustrate the efforts that are being made toward more efficient steamship-cargo handling in the face of ever-increasing costs. Containerization—the packaging in one bulk container of a large quantity of products to be transported as a unit—was cited as a major opportunity for lower-cost, more efficient handling.

A national packaging competition, short course and show is being planned for the fall of 1961 by the **Society of Packaging & Handling Engineers. J. L. Krager, Jr.**, Radio Corp. of America, has been named chairman of the 1961 competition committee.

Standards for aluminum foil in various laminations with paper and board are detailed in a new booklet recently compiled by the **Laminated Foil Mfrs. Assn.** The 12-page publication lists specifications for foil thicknesses, weights of papers commonly used in foil laminations, basic types of paperboards, methods of testing lacquers on foil, and a complete glossary of terms used by the industry. Also included is a page of conversion formulae. Copies may be obtained from the assn., 1002 Union Trust Bldg., Providence 3, R. I.

At a two-day fall meeting held in Chicago, **Nathaniel Gamse** of Gamse Lithographing Co. was elected pres. of the Label Manufacturers Div. of the **Lithographers & Printers National Assn.** He succeeds **Charles C. Rossotti**, Rossotti Lithograph Corp. Other officers elected were **Leo P. Blank**, v.p.; **W. S. Martin**, treas., and **Oscar Whitehouse**, secy. Mr. Whitehouse is LPNA exec. director. New directors of the div. are: **Eric C. Nielsen** of Nielsen Lithographing Co., **Raymond J. Kautz** of Standard Packaging Corp., and **George R. Langlois** of Muirson Label Co.

The **Institute For Better Packaging** has announced its reorganization to serve as the trade association of paperboard packaging manufacturers. Its new goals are research and promotion for packaging techniques for dairy, frozen food and meat products. At the same time the Paraffined Carton Research Council has been discontinued and its functions are now included in the institute's general program. **Harvey H. Robbins** continues as exec. secy.

**Dr. Samuel Steingiser**, asst. director of research, Mobay Chemical Co., and **Edwin A. Edberg**, Dylite Foam Dept. of Koppers Co., have been re-elected chairman and vice chairman, respectively, of the Cellular Plastics Div. of **The Society of the Plastics Industry.** They will serve for two years. Urethane Foam and Polystyrene Foam Commercial Groups were recently formed within the framework of the div. to consider commercial requirements and explore new markets. The div. plans to hold a cellular-plastics session during the SPI national conference and Ninth National Plastics Exposition in June.

*Dickens*

At the Package Designers Council's ninth annual meeting in New York, **Robert Sydney Dickens**, pres. of **Dickens, Inc.**, Chicago, was elected pres. **Karl Fink**, whom he succeeds, is now public-relations chairman. **Margery Markley** and **May Bender** were re-elected exec. v.p. and secy. Mr. Dickens, Mr. Fink and Miss Markley were re-elected to the board of directors for three-year terms. A program panel on public relations for package designers also was held.

**Frank W. Reynolds**, mgr. of IBM's Plastics Laboratory, has been elected 1961 pres. of the Society of Plastics Engineers. Other officers elected at the

## Events

Jan. 8-13—**National Retail Merchants Assn.**, 50th annual convention, Hotel Statler, New York.

Jan. 9-14—**American Rack Merchandisers Institute**, 10th anniversary convention, Chicago.

Jan. 22-25—**National Canners Assn.** and **Canning Machinery & Supplies Assn.**, 54th annual canners show and convention, Conrad Hilton, Chicago.

Jan. 24-27—**Society of Plastics Engineers**, 17th annual technical conference, Shoreham Hotel, Washington, D. C.

Jan. 29-Feb. 1—**Super Market Institute**, semi-annual conference, Americana Hotel, Miami Beach, Fla.

Feb. 6-8—**California Freezers Assn.**, annual meeting, Monterey, Calif.

Feb. 7-9—**The Society of the Plastics Industry**, 16th reinforced plastics div. conference, Edgewater Beach, Chicago.

Feb. 19-28—**Ipack 61**, packaging show, Fairgrounds, Milan, Italy.

Feb. 20-23—**Technical Assn. of the Pulp & Paper Industry**, 46th annual meeting, Hotel Commodore, New York.

Feb. 23-24—**National Wooden Box Assn.**, 62nd annual meeting, Boca Raton Hotel, Boca Raton, Fla.

Feb. 23-24—**The Materials Handling Institute**, Pacific Coast show and 6th annual materials handling and packaging conference, Cow Palace, San Francisco.

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This new package for French's scalloped potatoes is as modern as the tasty, convenient food it carries.

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Made from 100% virgin bleached fibre, HiYield Printkote contains more square feet per ton than higher density boards, and therefore yields more cartons per ton.

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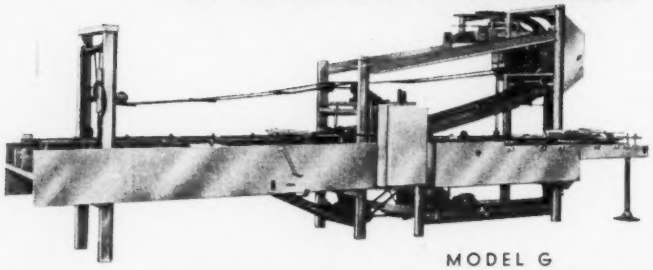

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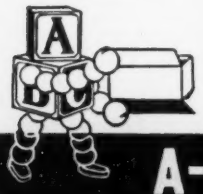


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## F.Y.I. [*Continued*]

organization's meeting in New York were **James R. Lampman**, v.p. of engineering, and **John Delmonte**, v.p. of administration.

Exhibitors scheduled for the fourth Packaging Machinery Show next year selected booth locations at a session held in New York by the **Packaging Machinery Mfrs. Institute**, sponsor of the biennial show. Conducting the booth selection were (left to right)

**Thomas C. Nichols of Shea Exposition Corp.**, show management; **Russell L. Sears**, PMMI exec. director, and **William W. Anthony, Jr.**, exec. v.p. and gen. mgr., Crompton & Knowles Packaging Corp., show committee chairman. The show will take place Nov. 7-10, 1961, in Detroit's new Cobo Hall. A concurrent forum on preventive maintenance is planned.

At the annual meeting of **Gravure Research, Inc.**, held in November, **H. R. Corwin** was elected pres., succeeding **Carl M. Metash**. GRI research and staff have been expanded and recently moved into new quarters in Port Washington, N. Y.

Establishment of a complete library and collection of publications on automatic merchandising at St. Louis University was announced at the 14th annual **Convention of Automatic Merchandising** in Miami Beach. An initial fund of $5,000 has been donated by **Thomas B. Donahue**, pres. of the **National Automatic Merchandising Assn.**

The **Industrial Designers Institute** has elected new national officers. **John Vassos** is now chairman of the board. Pres. and exec. v.p., respectively, are **Leon Gordon Miller** and **Joseph M. Parriott**. **Donald W. Brundage** was named West Coast v.p., and **Henry P. Glass** was named Midwest v.p.

The following have been elected directors of the **Fibre Box Assn.**: **C. Wade Hollingshead**—General Fibre Box Co., **Peter P. Wojtul**—Continental Can Co., **Edwin D. Dodd**—Owens-Illinois Glass Co., and **Norris J. Downing**—Diamond Hoosier Container, sub. Diamond National Corp.

Two swatch books containing samples of decorative box-wrapping papers are offered by **Embossograph Process Co.** Available without cost, the booklets illustrate the 176 decorative papers in the company's "Hi-Brite" line. For information, contact Embossograph Process Co., 3720 14th Ave., Brooklyn 18.

# How LusterBoard helps sell cologne to the fair sex

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# U.S. PATENTS DIGEST

This digest includes each month a brief summary of the more important current patents which are of special interest to all packagers.* Edited by H. A. Levey.

**Insulated Receptacle,** Richard L. Sayre (to The Heekin Can Co., Cincinnati, a corporation of Ohio). U.S. 2,954,893, Oct. 4. An insulated receptacle including an inner container having a vertically extending tubular wall open at its upper end and a bottom closing the lower end of said wall, said wall having two pairs of horizontally foreshortened beads formed therein.

**Composite Package,** Thomas W. Winstead (to Hedwin Corp., Baltimore, a corporation of Maryland). U.S. 2,954,901, Oct. 4. In a composite package, an outer carton and a separable inner container, said inner container having a semi-rigid body portion, a semi-rigid neck forming a filling and pouring spout projecting from said body portion and foldable into an adjacent wall thereof to form a valve.

**Dispenser Valve for Pressurized Containers,** Leonard M. Collins (to Pressure Dispensers, Inc., Los Angeles, a corporation of California). U.S. 2,954,903, Oct. 4. A valve for dispensing pressurized fluids comprising: a flexible, normally straight tubular nozzle; a valve seat formed in an upstream end of said nozzle, and an internal abutment in said nozzle disposed downstream of said seat and facing downstream.

**Insulated Perishable Food Carton,** Donald B. Kauffeld (to Excel-O-Therm Container Corp., Lexington, Ky., a corporation of Kentucky). U.S. 2,954,912, Oct. 4. For use in packaging, storing in refrigeration cabinets, when being transported, and when otherwise handling hot, cold, or frozen food products for unit consumption; a foil-clad semi-rigid carton whose wall portions and component portions are constructed from flexible, foldable laminated sheet material embodying interior and exterior surface-covering thin imperforate aluminum-foil laminates.

**Sanitary Opening Bags,** Clarence J. Poepper (to Central States Paper & Bag Co., St. Louis, a corporation of Missouri). U.S. 2,954,915, Oct. 4. A sanitary opening bag consisting of an elongated paper tube having normally flat parallel front and back walls connected along their longitudinal margins by bellows pinched side walls, the back wall projecting at one end beyond the transverse end margin of the front wall in the provision of a bottom flap.

**Means for Pressurizing a Container,** Carl Stearns and Lloyd Hansen (to American Cyanamid Co., New York, a corporation of Maine). U.S. 2,954,935, Oct. 4. Means for pressurizing a container comprising a container body, inside of which is a porous desiccant power cake impregnated with a readily liquefiable volatile propellant which is normally gaseous at room temperature and pressure.

**Feed Mechanism for Package-Making Apparatus,** Jack Dreeben, c/o Mercury Heat Sealing Equipment Co., Philadelphia. U.S. 2,955,398, Oct. 11. Package-making apparatus comprising a web supply roll, a forming tube for the web, a pair of separable jaws engaging the web for advancing it with respect to the forming tube and movable in a predetermined linear path.

**Overwrapping of Open-Top Cartons,** Henry S. Levkoff (c/o Standard Folding Tray Corp., Jackson Heights 69, N.Y.). U.S. 2,955,400, Oct. 11. Apparatus for overwrapping an open-top carton with sheet material, which comprises supporting means for releasably positioning a substantially horizontally disposed piece of sheet material of sufficient area to cover the top and to be folded downwardly into contact with the side walls and end walls of the carton.

**Flexible Container-Trimming and Sealing Machine,** Wallace H. Shapero and James H. Walker (to Continental Can Co., New York, a corporation of New York). U.S. 2,955,643, Oct. 11. Apparatus for sealing tubular containers of flexible thermoplastic material, comprising means for supporting a series of filled containers on respective vertical axes with open ends projecting upwardly, and for moving said containers horizontally from a filling station to a sealing station.

**Container for Loose or Packaged Bottles,** Allan E. Foote (to Container Corp. of America, Chicago, a corporation of Illinois). U.S. 2,955,707, Oct. 11. A shipping container package including a plurality of bottles of uniform diameter and height, the container comprising a bottom and four side walls formed of foldable paperboard, elongated flaps hinged along their longitudinal edges on opposite side walls adapted to be folded inward at right angles to said walls to form at least partial closure elements.

**Poultry-Box Construction,** James C. Wilson (to Owens-Illinois Glass Co. Toledo, a corporation of Ohio). U.S. 2,955,733, Oct. 11. A multi-compartment container formed of relatively stiff sheet material comprising, in combination, a principal body member including a bottom wall defined by side edges connected by angular corner edges, upstanding side wall panels foldably connected at said side edges.

**Collapsible Cellular Carton,** William H. Inman and Raynor M. Holmes (to Bloomer Bros. Co., Newark, N.Y., a corporation of New York). U.S. 2,955,735, Oct. 11. A collapsible cellular carton made from a blank of foldable sheet material cut, scored and folded to form a pair of longitudinally extending, spaced side walls and a bottom wall formed of two sections each having its outer edge foldably connected with the bottom edge of the adjacent side wall.

**Corner Lock Box,** Edwin L. Arneson (to Federal Paper Board Co., Inc., Bogota, N.J., a corporation of New York). U.S. 2,955,737, Oct. 11. In a carton having a bottom wall and side and end walls hinged to the opposite edges of said bottom wall, a corner connecting structure comprising a connecting panel at the end of a side wall which is foldable about a hinge-forming crease line into inwardly extending, upstanding, face-engaging relation with the adjoining end wall.

**Handle Carton,** Peter C. Collura (to Container Corp. of America, Chicago, a corporation of Delaware). U.S. 2,955,739, Oct. 11. A handle carton formed of foldable paperboard and comprising hingedly connected bottom and two side walls, a top wall section hinged on the upper edge of each side wall, said sections being secured in overlapping relation to form a composite top wall providing in the area of overlap an inner and an outer top wall section.

**Bag With Drawstring Closure,** Thomas E. Piazze (to Continental Can Co., New York, a corporation of New York). U.S. 2,955,741, Oct. 11. A container formed of a relatively thin, continuous plastic sheet material having a body portion of tubular form with a longitudinal seam comprising overlapped and adhered margins of the sheet material and a drawstring closure at one end of said container which comprises a length of string and a string-receiving hem.

**Product-Settling Attachment for Packaging Machines,** Alfred P. Gausman (to Hayssen Mfg. Co., Sheboygan, Wis., a corporation of Wisconsin). U.S. 2,956,383, Oct. 18. In a machine for packaging measured charges of a light, fragile and bulky product, a vertical former about which a continuous web of flexible sheet material drawn from a roll is formed into a tube, from which sections may be transversely sealed and severed by an end seal die to provide a succession of packages with each package being open at its upper end.

**Method of Concentrating Coating Material in Containers,** Donald G. Magill (to American Can Co., New York, a corporation of New Jersey). U.S. 2,956,528, Oct. 18. The method of sealing an open circumferential score line in a tubular, fibrous, wax-lined container body against infiltration of container contents while flanging said body, comprising telescoping the body over a heated and outwardly flared die medium having an annular shoulder thereon to reduce the applied wax lining to a flowable condition.

**Carton-Locking Means,** Norman G. Rindal (to American Can Co., New York, a corporation of New Jersey). U.S. 2,956,720, Oct. 18. Locking means for a carton, the carton including a cover panel, an upstanding front wall and a locking panel hinged to the cover and adapted to overlie the front wall.

**Bag Manufacture,** Lige Coakley (to Bemis Bro. Bag Co., St. Louis, a corporation of Missouri). U.S. 2,956,801, Oct. 18. Apparatus for feeding articles of flat flexible nature, such as bag tubes,

*For more detailed information, copies of patents are available from the U. S. Patent Office, Washington 25, D. C., at 25 cents each, payable in currency, money order or certified check. Postage stamps are not acceptable.

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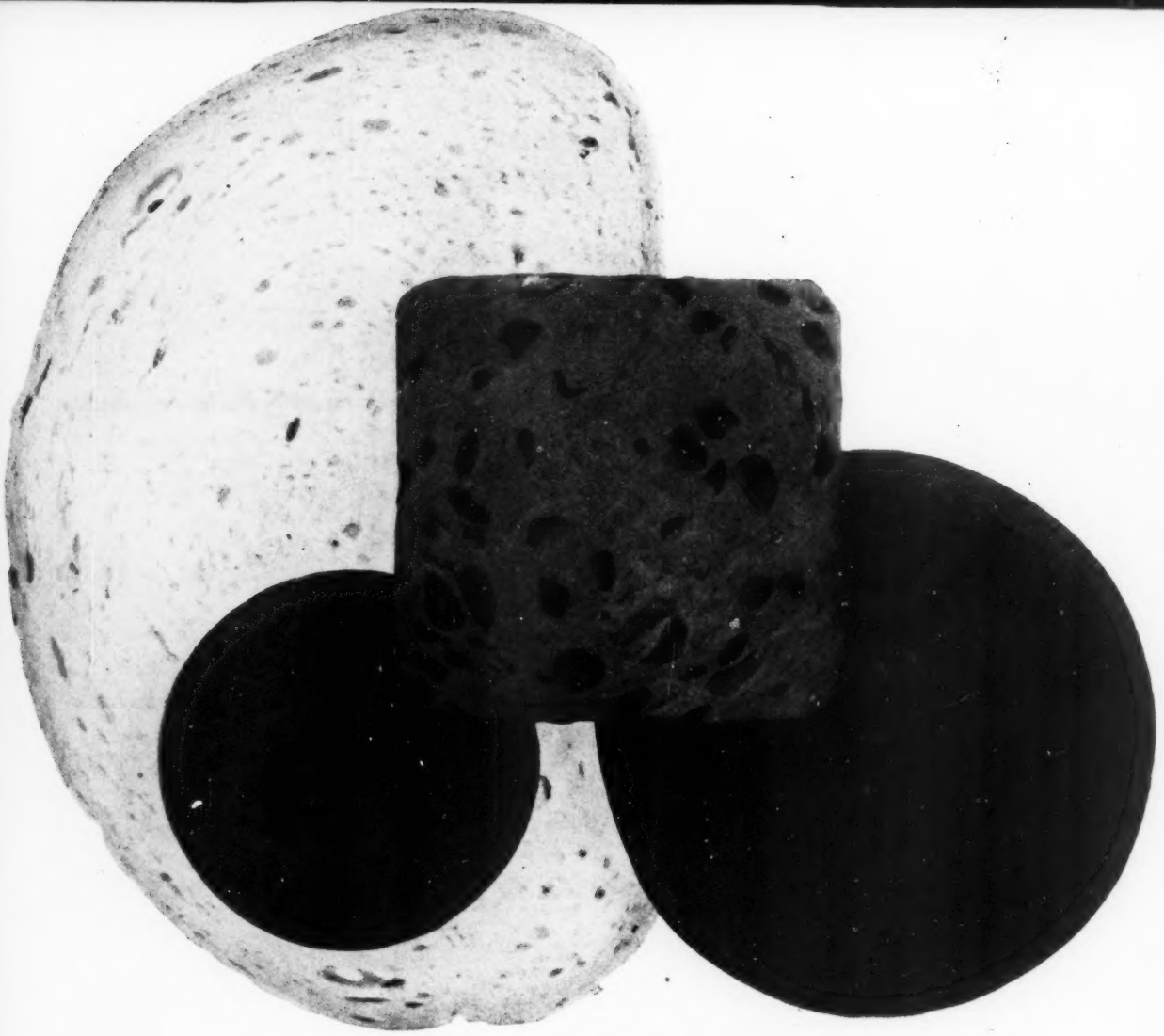

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## New container lures anglers

**Crickets make fine bream bait and Selph's Cricket Ranch in Memphis does a brisk business supplying them to hopeful rod 'n' reelers. The crickets are sold, alive and chirping cheerfully, in the paperboard container you see here, attractively printed in two colors and made by Standard's *Fonda Container Division*. Fishermen like them. And the crickets appear contented, too—at least while they're still in the container.**

## More buy in the French fry

**How much *sell* can you put into a single serving of French fries? This little 'food boat', especially designed for Jerry's Drive-In, St. Louis, by Standard, proves you can sell right down to the last mouthful. "Jerry's Drive-In" is spelled out on all four sides of the container, while the bright orange stripes lend a festive touch to every portion. Jerry's reports that customers remember the new trays and that business is booming like—well—hot potatoes!**

FILM AND FOIL PACKAGING • FOLDING AND SET-UP BOXES • CLOSURES AND CAP LINERS • PAPER PAILS, CANS, TRAYS • LABELS AND OVERWRAPS • LAMINATIONS


## Patents [*Continued*]

one after another in overlapping relation from a stack thereof, comprising a conveyor for feeding the articles.

**Method of and Apparatus for Filling and Emptying Collapsible Containers,** James A. Mitchell (to Union Carbide Corp., New York, a corporation of New York). U.S. 2,957,283, Oct. 18. A method of washing a collapsible container having a normally closed discharge opening to prevent contamination of the container contents, which comprises first inflating said container with gas under pressure, and while maintaining such inflation, opening it.

**Packaging Mechanism,** Charles B. Harker (to Bartelt Engineering Co., Rockford, Ill., a corporation of Illinois). U.S. 2,957,284, Oct. 25. A device for measuring and dispensing a predetermined quantity of material consisting essentially of cohesive granules, said device having, in combination, a blower head operable intermittently to blow air along a first predetermined axis.

**Machine for Fabricating Containers,** Charles Z. Monroe and Harry B. Egleston (to Ex-Cell-O Corp., Detroit, a corporation of Michigan). U.S. 2,957,289, Oct. 25. In a machine for fabricating containers, the combination comprising a side frame structure having a mandrel assembly journaled thereon, a blank magazine mounted on said side frame and defining a loading station.

**Bag,** Russell J. Williams (to Bemis Bro. Bag Co., St. Louis, a corporation of Missouri). U.S. 2,957,394, Oct. 25. The method of manufacturing reinforced multi-ply paper bags comprising combining at least three paper webs, feeding in between two of the webs a first series of transverse reinforcing bands spaced at bag-length intervals.

**Shipping Container,** Oscar F. Grim and Arthur Lankin (to Love Box Co., Wichita, a corporation of Kansas). U.S. 2,957,575, Oct. 25. A shipping device comprising side walls, end walls integral with said side walls, a bottom integral with said side and end walls.

**Ventilated Shipping Container for Fruits and Vegetables,** Mark B. Royce (to Continental Can Co., New York, a corporation of New York). U.S. 2,957,597, Oct. 25. A rectangular ventilated shipping container for fruits and vegetables, including a bottom and ends formed of fibreboard and sides formed of separate unitary wood slatted structures having wood slats secured in spaced relationship upon wood stringers.

**Carrying Carton,** Fred A. Ryder and John R. Redpath (to Chicago Carton Co., Chicago, a corporation of Delaware). U.S. 2,957,602, Oct. 25. A collapsible carrying carton formed from a single sheet of paperboard material comprising a bottom wall and opposed side walls foldably connected to said bottom wall along opposite edges.

**Collapsible Box,** Hubert V. Bolding (to Standard Packaging Corp., New York, a corporation of Virginia). U.S. 2,957,617, Oct. 25. A collapsible box comprising a bottom panel, a front panel, a back panel and two side panels, with each of said front, back and side panels being hinged to said bottom panel.

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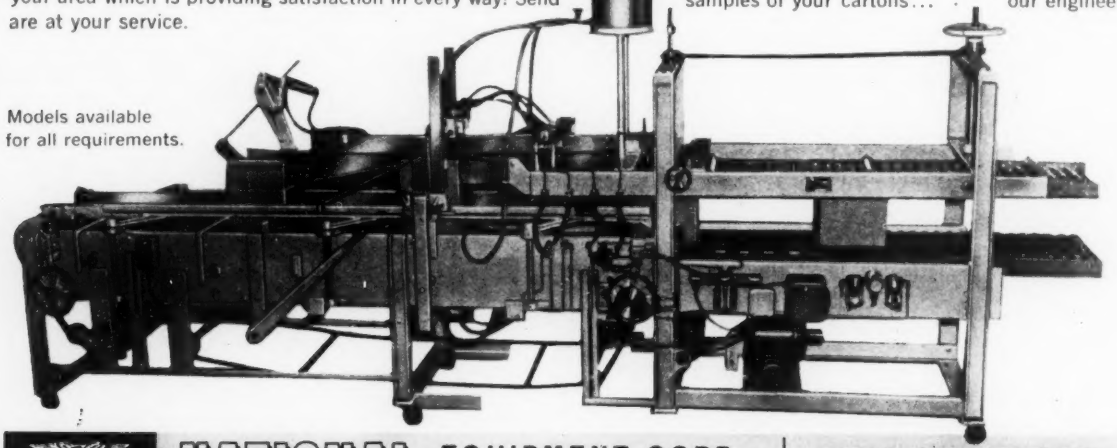

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# Manufacturers' Literature

**Described below . . . the latest literature, catalogs and brochures from the packaging industry. Dollar saving and dollar making ideas and data . . . available without charge.**

## EQUIPMENT • SUPPLIES • SERVICES

**CAN IMPRINTER.** Illustrated sheet describes machine that imprints filled or empty cans—¼ pt. to 1 gal.—with or without ears. Handles double chine cans, pressure cans, adaptable to special end cans. Specifications, other data. Charles Beck Machine Corp. (150-A)

**PACKAGING PADS.** Illustrated sheet describes packaging insulation material that protects against heat, moisture, abrasion and shock. Applications, specifications, other data. Boyertown Packaging Service Corp. (151-A)

**AUTOMATIC MARKING MACHINERY.** 4-page illustrated brochure describes attachments for coding and printing. Features, applications, specifications, other data. Bell-Mark Corp. (152-A)

**PRINTING MACHINERY.** 4-page illustrated folder describes automatic intaglio press with new swing-out feeder that puts photogravure within range of smaller printers. Specifications, other data. Champlain Co., Inc. (153-A)

**BAG PACKAGING GUIDE.** 15-page illustrated reference book describes complete line of bags—including paper, open-mesh, cotton, burlap, plastic, laminated and others. Chase Bag Company. (154-A)

**DROPPERS; DROPPER ASSEMBLIES.** 4-page illustrated folder describes complete line of droppers—including blunt type, pointed straight or bent, ball-end straight or bent and curved tip. Dropper bulbs and plastic dropper caps also covered. Colonial Applicator Co. (155-A)

**FILM GUSSETER.** Illustrated sheet describes equipment for gusseting flat polyethylene tubing directly—on any bag machine. Bag-making machine covered also. Diagrams, features, other specifications. Conapac Corp. (156-A)

**CODING, MARKING, IMPRINTING MACHINES.** 4-page illustrated folder describes automatic production-line coding, marking, imprinting machines for packages, parts and products. Features, applications, specifications. Gottscho. (157-A)

**AMPOULE FILLING & SEALING.** 4-page illustrated folder describes high-speed ampoule filling & sealing machines that can be adjusted while running, offer variable speed drive and many other features. Specifications, other data. Walter H. Kansteiner Machinery Co. (158-A)

**SYNTHETIC PIGMENTS.** 4-page brochure, with samples, describes line of synthetic nacreous pigments that provide a multiple color effect which cannot be achieved with conventional colorants. Advantages, formulations, other data. Mearl Corp. (159-A)

**EXTRUDERS.** 28-page illustrated book describes line of extruders and accessory equipment—including cooling and polishing roll assemblies, film take-up units, cutter-stacker units, etc. Full description, specifications, handy selector guide. Midland-Ross Corp. (160-A)

**CAN LINE AUTOMATION.** 12-page illustrated book describes line of controls for can line automation that operate on electro-magnetic proximity principle—without touching the cans. Diagrams, specifications, other data. Peco Corp. (161-A)

**RESINS FOR RUBBER COMPOUNDING.** 18-page illustrated book describes resins for rubber compounding and for rubber-based adhesives. Covers functions and types of phenolics and resins, applications, properties, etc. Schenectady Varnish Co., Inc. (162-A)

**KRAFT PAPER.** Sample book features extensible kraft paper with two-way stretch that defies shock, reduces breakage, prints sharp. Scott Paper Co., Hollingsworth & Whitney Div. (163-A)

**VACUUM FORMING MACHINES.** 6-page illustrated catalog brochure describes features and applications of machines designed for vacuum forming, skin packaging, blister packaging. Specifications and data. Product Packaging Engineering. (164-A)

**LETTER PRESS INK.** 4-page folder describes new water-reducible letter press ink that features fast setting, quick drying, good press stability, maximum mileage, etc. American-Marietta Co., Sinclair & Valentine Co. Div. (165-A)

**STATIC ELECTRICITY.** Illustrated folder describes aerosol bomb spray that offers simple, quick, effective relief from static electricity to the printing industry and other fields. Statikill, Inc. (166-A)

**SMALL PACKAGE CHECK WEIGHER.** Illustrated 2-page data sheet describes features and applications of machine designed to provide fast, in-motion check weighing of packaged items in 1 oz. to 50 oz. range. Specifications. Toledo Scale Corp. (167-A)

**LETTER PRESS INKS.** Two sample books describe complete lines of letter press and offset inks that offer quicker, more positive drying; faster backup; less down-time; sharper tints, etc. Flint Ink Corp. (168-A)

**AUTOMATIC TAPING MACHINERY.** 4-page illustrated folder describes automatic taping machinery for new or multi-use cases. Advantages, applications, detailed specifications, schematic diagrams. Emhart Mfg. Co., Standard-Knapp Packaging Equipment Div. (169-A)

**PISTON FILLER.** Illustrated catalog page describes 2-cylinder, non-stop piston filler that eliminates surge and starting and stopping of containers. Advantages, features, specifications. Elgin Mfg. Co. (170-A)

**PAPER BOARD.** 28-page illustrated book offers pictorial tour of paper board mill that produces ¾ million tons of board annually from 12 paper board machines. Detailed picture stories of various aspects of paper board production. Federal Paper Board Co., Inc. (171-A)

**AUTOMATIC CASE SEALING.** 8-page illustrated folder describes automatic case sealing equipment that speeds production, saves floor space, permits flexibility in floor planning. Advantages, specifications, operating details, other data. J. L. Ferguson Co. (172-A)

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## EQUIPMENT • SUPPLIES • SERVICES

**TEMPERATURE CONTROLLERS.** 8-page illustrated brochure describes four new electronic temperature controllers and indicators that permit precise matching of control instrument to application over a temperature range from —50 to 600 degrees Fahrenheit. General descriptions, advantages, complete specifications. Fenwal, Inc. (173-A)

**LAUNDRY BOXES.** 4-page illustrated folder describes new laundry boxes that save on storage space, packing time, string costs, and offer better appearance, too. General description, advantages, colors available, etc. Fibreboard Paper Products Corp. (174-A)

**PACKAGING FILM.** 8-page illustrated book describes multi-purpose packaging film designed for automatic packaging, in-store packaging, overwrapping by hand or machine, window packages. Descriptions, advantages, other data. The Goodyear Tire & Rubber Co. (175-A)

**GUMMED TAPE.** 4-page illustrated folder lists 10 steps for better results with reinforced gummed tape. Also gives information on and advantages of reinforced tape. Gilman Paper Co. (176-A)

**SILICONE RUBBER.** 4-page illustrated folder outlines rewind shop procedures for room temperature vulcanizing with silicone rubber. By following steps outlined in this bulletin, motor rewind shops can easily provide this added protection to existing motors. General Electric, Silicone Products Dept. (177-A)

**PACKAGING MACHINES.** 4-page illustrated folder describes packaging machine that automatically packages non-uniform products. Production advantages, features, specifications, other data. Hayssen Mfg. Co. (178-A)

**VACUUM METALLIZERS.** 4-page illustrated folder describes vacuum metallizers for industrial and decorative applications. Describes vacuum metallizing process in detail, gives suggested metallizing plant layout and typical cost analysis. Specifications, other data. Hull Corp. (179-A)

**CUSHIONING MATERIALS.** 12-page illustrated book discusses interior packaging that fully meets requirements of U. S. and Canadian specifications covering cellulosic cushioning materials. Discusses cushioning, surface protection, technical analysis of cushioning performance characteristics, etc. Kimberly-Clark Corp. (180-A)

**IMPRINTING SYSTEM.** 6-page folder describes new imprinting system for modern product identification that cuts production and labor costs, increases efficiency of operation. Features, applications, other data. A. Kimball Co. (181-A)

**SKIN PACKAGING.** 4-page illustrated folder describes all-pneumatic skin packaging and vacuum-forming machine. Features, advantages, other information. The Plattner Co. (182-A)

**CARTON FORMING.** Illustrated catalog sheet describes carton and tray forming and gluing machine that turns out cartons and trays at rate of 70 per minute. New closed glue system provides immediate operation without make-ready waste, eliminates costly cleanup. Peters Machinery Co. (183-A)

**AUTOMATIC PACKAGING MACHINERY.** Folder and assorted catalog pages describe complete line of standard machines that weigh and fill, checkweigh, wrap, apply tax stamps, convey packages, etc. Advantages, applications, standard specifications, other data. Sperry Rand Corp., Div. Wright Machinery Co. (184-A)

**EXPANDABLE POLYSTYRENE.** Technical data bulletins cover automated expandable polystyrene molding, horizontal speed molding, pre-expanding, insulation block molding. Complete information, features, other technical information. Miller & Van Winkle Co. (185-A)

**LABEL MARKERS.** 6-page illustrated brochure describes self-stop label markers for packaging, shipping, box ends, identification, stock control, price marking. Time saving features, applications, general information on marking methods. Soabar Co. (186-A)

**MIXERS.** 4-page illustrated folder describes production-size batch type mixer that completely mixes products in 30 seconds to 8 minutes running time. Applications, industries, specifications, other data. Littleford Bros., Inc. (187-A)

**ADHESIVES.** 16-page illustrated booklet describes packaging and paper converting adhesives for carton and case sealing, folding cartons, window boxes, tube winding, kraft bags, etc. General descriptions, features, physical and chemical properties. Armour Alliance Industries, Industrial Adhesives Div. (188-A)

**BLISTER PACKAGING.** 8-page illustrated book describes various methods for attaching blister to display card: heat seal, foldover, slide, skin or stick-on blister. Advantages, features, applications, etc. Jackmeyer Corp. (189-A)

**CARTONING AND CASE PACKING.** 20-page illustrated folder describes the machinery and equipment designed for cartoning and case packing of such items as beverages, drugs, foods, and sundries, and other items. R. A. Jones & Co., Inc. (190-A)

**WOOD PARTICLE BINDER, FLOUR UTILIZATION RESINS.** 40-page technical bulletin discusses methods of producing, handling, converting wood particles into particle board using specifically designed resins. Tables, specifications, charts. American Cyanamid Co., Plastics & Resins Div. (191-A)

**PINNED ROLLS AND CYLINDERS.** 4-page folder pictures a complete line of rolls, cylinders, tubes, shafts, bars, plates, sections and conveyor belts for scratching, tearing, punching, picking, stretching, fluffing, mixing, piercing, shredding and many other applications. Robert A. Main & Sons, Inc. (192-A)

**PLASTIC PROTECTORS.** 16-page booklet on complete line of plug and cap protectors for machine screw-threads, plug protectors for pipe threads, cap protectors for tubing and propeller shaft threads. S. S. White, Plastics Div. (193-A)

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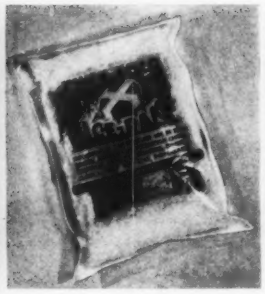
President's Award *to* Dow Chemical's Dobeckmun Co.: *Converted materials used for tetrahedron-shaped Glopak shampoo package for Glover Davis Co. Designer, Warren A. Clark, Dobeckmun Co.'s, Western art director. Judged as possessing in greatest measure attributes of an outstanding packaging development. Effects cost savings in material, warehousing, packaging speed, freight.*



*To* Tower Packaging Co.: *Unusual flexible squeeze package for Kwik-Cold Co. Instant Ice Pak. Squeeze across package breaks inner sealed pouch to let chemicals combine. On shaking, it gets ice cold, ready for use.*

*To* Kennedy Car Liner & Bag Co.: *Reclosable 0.004-polyethylene pouch for Shepherd Tobacco Co. Smoking Mixture. Zip-close construction gives moisture protection and consumer convenience. Brand name remains with package. Costs are cut below former package by reduced labor.*

## Flexible packaging award winners

Five "breakthrough awards" in this year's National Flexible Packaging Assn. competition give special recognition to outstanding applications that reveal the ever wider use of flexible packaging.

Each of the "breakthrough awards" was selected as representing a heretofore untapped field for flexible packaging, pointing up how "flexible packaging continues to make inroads into fields recently dominated by other types of packaging, thanks to research and development of the past two decades," says John M. Cowan, managing director of NFPA. "This new classification, we believe, will help to show also how flexible packaging is able to dig deeply for sales into the shrinking pool of products which have always gone to market without packaging," he pointed out.

Descriptions of the five breakthrough awards and the best-of-show President's Award accompany the photos herewith.

More than 70 entries in the competition were singled out for special awards, first and merit awards in various product categories. Awards for printing proficiency were as follows: *Flexographic* to The Dobeckmun Co. for laminated and coated products produced for Milk Foods, Inc., Blue Cheese Dressing package and to Bemis Bro. Bag Co. for polyethylene bags and pouches produced for Hy-Line Poultry Farms promotional literature; *gravure* to Nashua Corp. for polyethylene bags and pouches produced for Union Wadding Co. "Roll Out Garden" packaging.

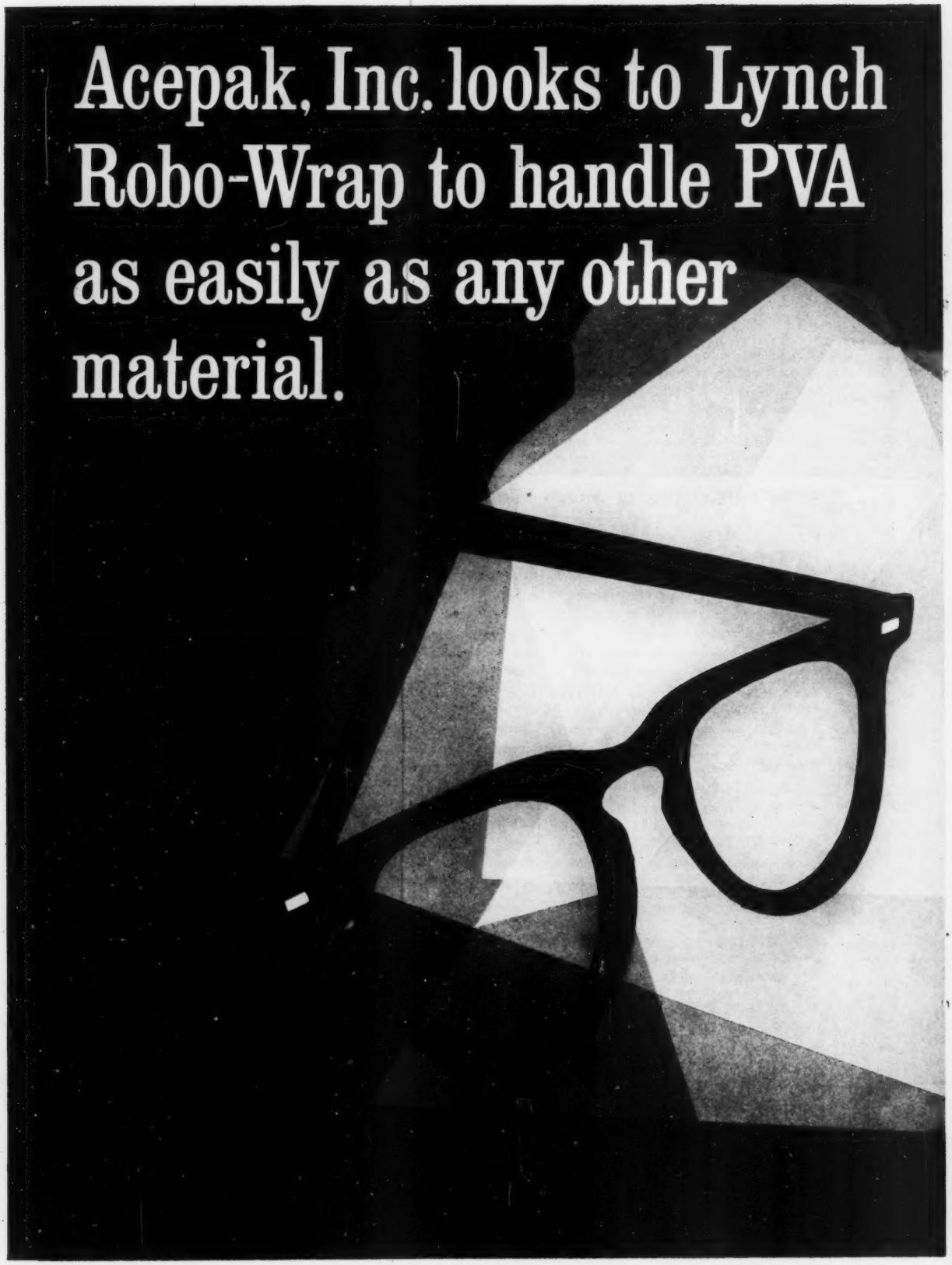
Top corporate winners in number of awards received were Bemis Bro. Bag Co. with 15; Milprint, Inc., with 12; Reynolds Metals Co. with 10; Wrapture, Inc., with nine; Crown Zellerbach Corp., the Chase Bag Co. and Cellu-Craft, Inc., with eight each. This distribution of awards among both large and smaller converting companies, NFPA states, proves that relative size is seldom a limiting factor in a converter's creativity and imagination.●

*To* Bemis Bro. Bag Co.: *First hermetically sealed drawstring bag of polyethylene, to package Kilgore Seed Co. Green Tropics fertilizer. Drawstring is sealed in gusseted top. Bag is filled from bottom. Knife is used to cut through bag; user recloses with drawstring.*

*To* Package Products Co.: *Polyethylene bag to package Haggar Co. men's slacks. Believed to be first application for better quality slacks. Pre-flip construction permits customer examination of fabric. Package permits larger forward stocks for speedy selling, reduces shopwear.*

*To* Dow Chemical's Dobeckmun Co.: *Polyethylene bag for a sample of General Foods S.O.S. Interwoven Soap Pad; designed to open door to new resale unit in polyethylene, representing a cost savings over former carton.*

# Acepak, Inc. looks to Lynch Robo-Wrap to handle PVA as easily as any other material.



PVA – Polyvinyl alcohol film, Polyethylene, Saran, cellophane, paper and foil laminates.

LYNCH
CORPORATION
Anderson, Indiana

## Yesterday PVA Film Was Hard to Handle

Today a standard 2-tube Robo-Wrap machine teamed with a Lynch volumetric feeder makes PVA as sure and easy to handle as any other film.

At Acepak, Inc. in Chicago, Robo-Wrap is sending the world's leading detergent, soap powder and chemical brands to market at a rate of 110 to 120 PVA packages per minute.

How does a packaging machine designed for other films *also* handle PVA?

*"Robo-Wrap's unique hand-over-hand action reduces machine speed—lengthens dwell time—permits lower temperatures,"* says Mr. Arthur Rothschild, President, Acepak, Inc.

The result: less cost per package . . . not enough down-time on volume production runs to worry about, because Robo-Wrap's hand-over-hand action holds jaws in sealing position longer, thus preventing torn roll stock. Robo-Wrap automatically forms, fills and seals pouches and pillow-packs—plain or printed—and runs with or without electric eye registration.

To keep up with demand for PVA packaging, Acepak, Inc. has ordered additional Robo-Wraps.

Whether you package liquids, powders, solids or granules . . . in poly, cello, PVA, plastic or laminate pillow packs . . . look to Lynch for automated systems that cut costs *all along the line.*

Lynch engineers will help plan your handling and packaging system without obligation.

**Volumetric Feeders** specially designed for trouble-free flow of uniform density products.

Manufacturing Engineers of automatic processing equipment in the glass, packaging, plastic and other industries.

*LEADERS LOOK TO LYNCH—for machines that package almost everything*

**LYNCH CORPORATION • ANDERSON, INDIANA**

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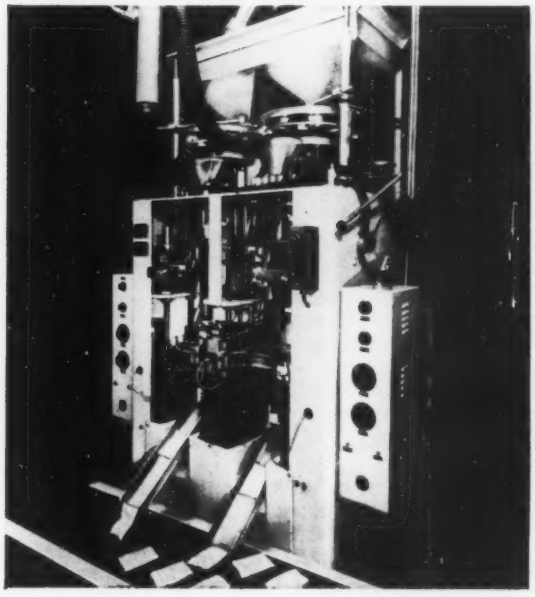

*Robo-Wrap Model 201-V with Lynch volumetric feeder at Acepak, Inc., Chicago, Ill.*

**Reduce packaging and shipping costs with**

# MID-STATES® fast, trouble-free STITCHING WIRE

Boxes and shipping containers of fibre or corrugated materials can be stitched or stapled faster, more dependably with free-flowing Mid-States Stitching Wire. Never clogs stitching head because it has no raw edges; never flakes. Comes in 5, 10, 25 and 50-lb. coils.

*Furnished flat and shaped in all standard sizes (special sizes available), with galvanized or coppered finish.*

**5-lb. Spools**
Packed 10 Spools per carton.

**10-lb. Spools**
Packed 6 spools per carton.

**25-lb. Spools**
Packed 4 spools per carton.

**50-lb. Spools**
Packed 20 spools per pallet.

**STITCHING MACHINES** in a variety of models also available from Mid-States. Head sizes range from 12 to 36 in.; capacities up to 375-point (⅜″) board; with Electric Solenoid Trip if desired. Lease or sale agreements available.

**ROUND STEEL STRAPPING and MACHINES**

**For binding and reinforcing bales, bundles or boxes.**

**Strapping in wide variety of gauges, galvanized or coppered, in quantities from 5 to 500 pounds.**

**Machines on lease or sale agreements.**

WRITE today for further details, catalog sheets, samples and prices.

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CRAWFORDSVILLE, INDIANA • JACKSONVILLE, FLORIDA

## Birds Eye plastic pack

The long-expected entry of rigid plastic packaging into the big-volume frozen-food field may now be at hand with the test marketing by the Birds Eye Div. of General Foods of a high-density polyethylene tray with a laminated polyester-polyethylene film cover for frozen cut

*Tear tape is key convenience feature of Birds Eye's new all-plastic pack for frozen fruits and vegetables. Tape is formed of polyethylene-coated polyester film and sealed under the polyester film cover of the vacuum-formed polyethylene tray.*

green beans, lima beans, corn, peas and strawberries.

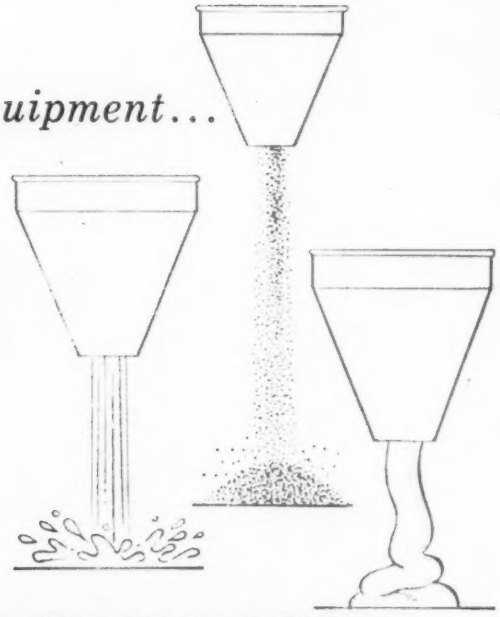
Said to be competitive in price with standard carton-plus-overwrap packages, the new all-plastic container was introduced in Syracuse, N. Y., then followed up by personal interviews that revealed "a very favorable consumer attitude," according to a Birds Eye spokesman.

This development is significant because of a continuing divergence of price in favor of plastics over other materials and an expected wider use of thermoformed plastics, particularly for foods.

In construction, the new package consists of a base tray that is vacuum formed from high-density polyethylene sheet. After filling, it is covered with a heat-sealed flexible film of 50-gauge polyester coated with 1 mil of polyethylene. For ease of opening, a longitudinal tear strip, made from a ⅛-in. band of polyester film coated on both sides with polyethylene is imbedded in the film cover. Brand and product identification are imprinted on the film in three colors.

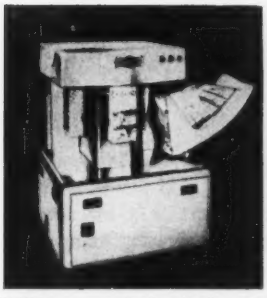
Extended market tests will be made on the plastic package in the

*In filling and packaging equipment...*

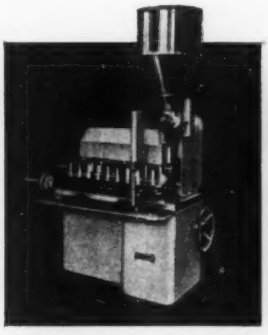


# THERE'S ONLY ONE THING FINER THAN SWEDISH CRAFTSMANSHIP

**That's Swedish craftsmanship plus prompt U.S. service!** And that's what you get in each and every Arenco machine. Performance that is second to none, backed by the service only fully stocked warehouses and skilled specialists can provide. For complete details, write Arenco: one of the most dependable names in filling, packaging, proportioning, closing, sealing and check-weighing equipment.



VUF automatically feeds and opens as many as 2100 bags an hour, can serve three combination weighers or portioning machines at one time. Synchronized controls maintain best filling speed, eliminating no-fills or double portioning of hard-to-handle materials. Opens each bag before filling. Handles sizes from 2½"-6¼" wide to 8⅝"-15⅛" high. Quick changeover for biscuits, breakfast cereals or granular products.



GAB automatic tube filling and closing machine packages liquids, semi-liquids and stiff pastes at speeds as high as 3000 an hour. Complete filling, with no air bubbles or pockets. "No-tube, no-fill" efficiency. Takes tubes up to 1½" in dia., 7¼" in length, 1¾" x 8" on special order. Tube-cleaning, cap-tightening, blow-off and coding device standard equipment.

GAN, "big brother" of the GAB, fills and closes up to 7000 units an hour with one operator. Automatic tube feed, photo electric tube register and dual filling nozzles. Tube discharge can be tailored to virtually any cartonning set-up. Handles tube diameters up to 1½", lengths to 7¼". Like GAB, fast changeover from size to size, product to product.

GAP heat sealer works well in combination with the GAB ... enables you to seal perfectly packages of either polyethylene or p.v.c. plastic. Easy to hook up to the parent machine. And on the GAP, precision thermostats maintain proper sealing temperatures for whichever plastic material you work with, whether production is long-run or short.

ARENCO

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**FROM ROLL TO PACKAGE** *your profit picture is vastly improved with finishing room equipment designed to your requirements*

*by* Clark-Aiken

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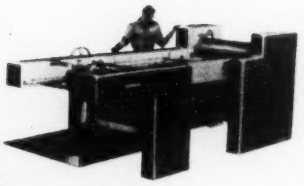
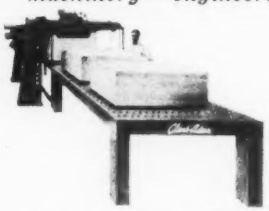
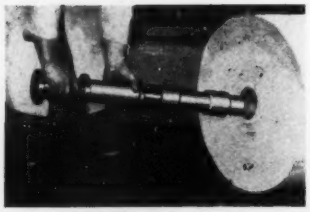


*. . . watch the new* **TYPE G CUTTER-FILER** *in action--demonstrating fast, economical registration and general purpose sheeting.*

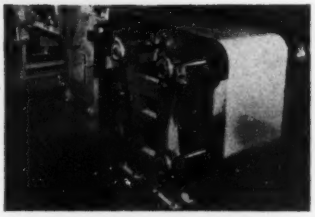
*. . . learn how Clark-Aiken's new line of* **LIFT TABLES** *expedite materials handling anywhere in the shop—and for the first time see the all new* **AIR TABLE**—*typical of the many Clark-Aiken innovations in finishing room machinery—engineered for*



*fast, efficient pile removal, transfer and packaging.*



*. . . you'll recognize the possibilities for greater production afforded by the improved Clark-Aiken* **STUB ARBOR** *that speeds roll changeovers and cuts labor costs.*



*. . . you'll see demonstrated, on one of Clark-Aiken's many models of custom built* **ROLL STANDS**, *a refined, more effective braking system for fast, positive cutter feeding from rolls.*

*the* Clark-Aiken **COMPANY, 795 HART AVE.,** *Lee, Massachusetts*

**CANADIAN REPRESENTATIVE:**
**GORDON W. KEATES,**
**133 FLORIDA DRIVE,**
**SCARBOROUGH, ONTARIO**

near future to obtain further data on shelf life of the package and on consumer reactions.

SUPPLIES AND SERVICES: Vacuum-formed trays and laminated "Mylar" polyester film by Formed Container Corp., Orangeburg, N.Y. ●

## High-density PE

[*Continued from page 118*]

capacity with a liquid, which is usually water and mercury. The weight of the liquid is increased until the bottles "give" a definite amount when picked up. Average values are used from a panel of three technicians. Results are reported in weight required to produce a specified bottle distortion.

6. *Permeability test.* This has been described in detail in the literature (10). However, the method used is given briefly here. Similar techniques are used for all sizes of packages, except for the equipment used for weighing. For packages weighing less than 200 gms., we use an analytical balance. For larger packages, either an 800-gm. or 2,000-gm. Mettler balance is used.

To determine product permeability through plastic bottles, we roughly weigh the bottles alone and then with closures. Bottles are then filled to shoulder height, capped tightly and total package weight recorded. They are then weighed each week for four weeks.

We assume a straight line weight loss (or gain) with time and from the 28-day data calculate the one-year weight loss. Permeability is then reported as "estimated % weight loss per year." Such estimated permeation figures have been found to be on the conservative side, when compared to year-long tests, in a vast majority of cases.

Typically, all polyethylene bottles are tested in triplicate at three different conditions: (a) 73 deg. F. air-conditioned laboratory, (b) 100 deg. F. forced-air oven, (c) 120 deg. F. forced-air oven.

### References

9. Nielsen, A. R., and Temple, E. J., "Permeation Effects of Bottle Size & Weight," *Package Engineering*, Aug., 1958.

10. Pinsky, J., Nielsen, A. R., and Parliman, J. H., "Shelf Life in Polyethylene," MODERN PACKAGING, Oct., 1954, p. 145. ●

Q. What's NEW in DISPLAY PACKAGING?

A. This toy made by Barclay Manufacturing Co. Inc., Union City, N. J. is packaged in a DOMEPAK® by Plastic Artisans. Dome flanges are sealed directly to card surface.
Shows how DOMEPAK® can unitize high, narrow and complex items in an attractive display package.

PLASTIC ARTISANS, INC.
DOCK ST. & MARTIN PLACE • PORT CHESTER, N. Y.
P. A. HAS THE DESIGN AND MASS PRODUCTION EXPERIENCE AND EQUIPMENT TO HELP YOU WITH YOUR DISPLAY PACKAGING FROM CONCEPT TO COUNTER. SEND FOR P. A.'S NEW "DISPLAY PACKAGING" GUIDE BOOKLET.
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PRESSURE SENSITIVE LABELS and SEALS for FOIL PAPER and ACETATE

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Press-*SURE*-Stick labels and seals

CAMEO DIE & LABEL CO.
154 W. 14th Street, New York 11 N. Y.

Permanent or removable adhesive
In Canada Cameo Crafts Inc., 157 St. Paul Street, West Montreal 1, Que.

Exclusive... New Two-Cylinder
...Non-Stop Piston Filler

Elgin
EARNS ITS WAY

Perfect For Filling Liquids and Semi-Liquids into Polyethelene • Glass • Tin • Aluminum Containers

- Exclusive continuous filling
- Eliminates surge
- Eliminates start and stop of line
- Simplified container and product changeover
- High speed filling rate
- Easy cleaning
- Nickel alloy or stainless steel contact parts
- Agitator and special sizes cylinders available

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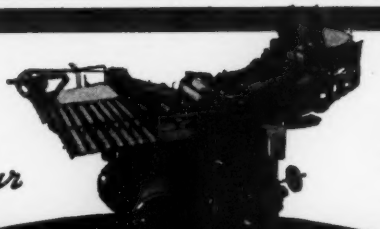

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## Bottling 50% faster

[*Continued from page 101*]

every other bottle to the far side of the exit conveyor, thus creating two staggered rows of bottles. The bottle spotter, a device containing two offset rotary paddles, then aligns the bottles accurately in twin rows for inspection and special stamping.

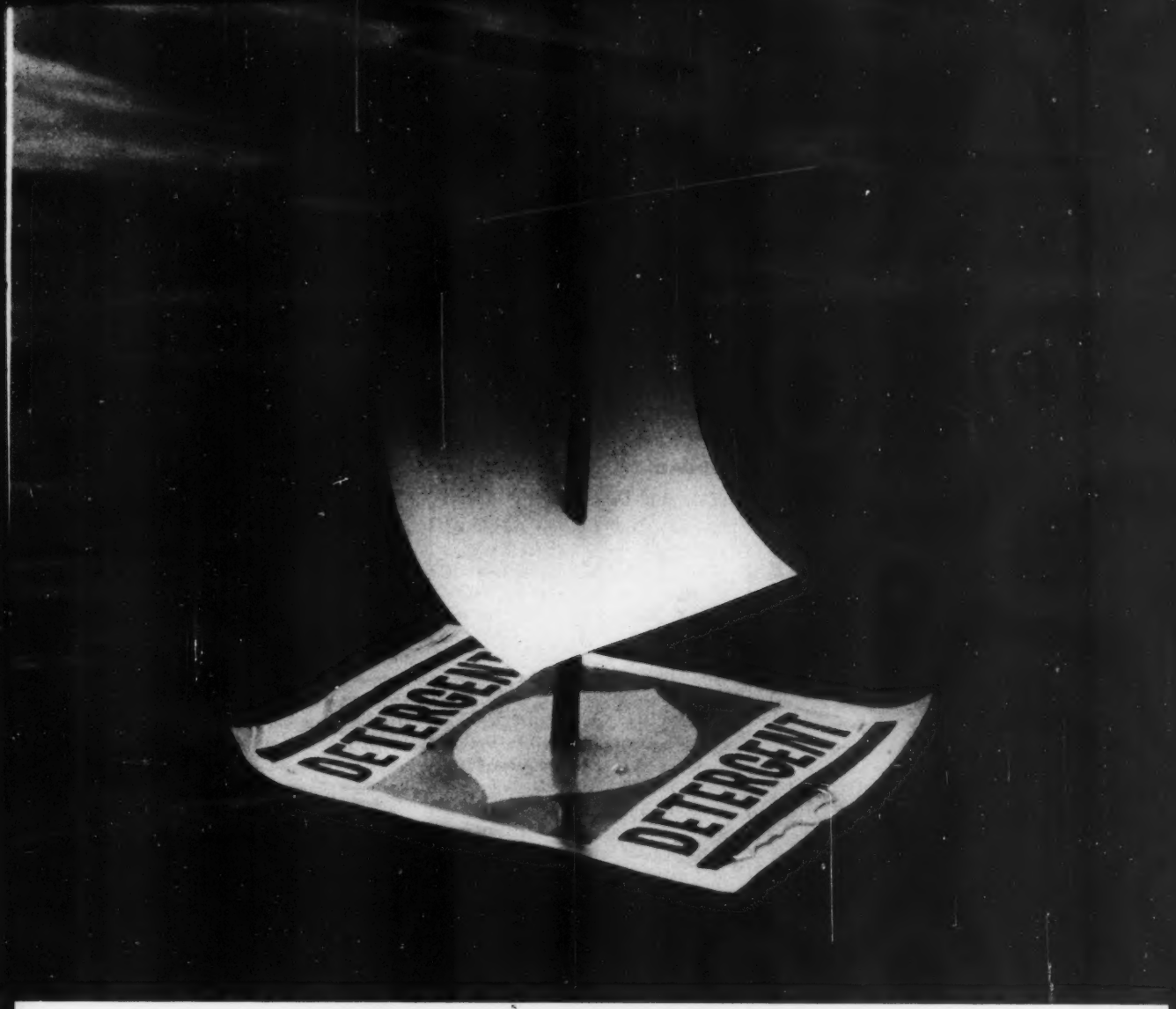
A new feature on the main inspection table, where state tax stamps are applied (and gift cartoning is performed on part of the line output), is a smooth steel conveyor belt that reduces bottle friction at the entrance to the new automatic case packer.

At this latter point, the bottles are divided from two into four lanes by a paddle gate and are pushed onto a slotted deadplate, where they are further separated into 12-bottle case loads by pins which rise from under the machine and hold back the incoming lines of bottles.

Empty cases with dividers from the unscrambling operation are fed to the case packer on an overhead roller conveyor. These cases are open on the bottom (with full center flaps) and travel upside down on the conveyor with the open flaps up. The "Government panels" on all cases face the same direction (to the right) as the cases enter the top part of the machine. Reaching the forward end of the caser, the closed shippers are reversed in direction and also turned 90 deg. so that the cases proceed toward the rear of the machine with the Government panel facing the direction of movement. Flying arms pull open the main flaps and vacuum plates lift the end flaps, permitting plows to complete the opening operation. Each case, with flaps held open, then describes a loop down to the lower portion of the machine, where it passes over the waiting bottles.

A case load of bottles is raised smoothly into the case as it pauses momentarily by a set of four arms which are chain driven in a rectangular path. Plows close the end flaps and the case is turned 90 deg. by a flying arm so that glue can be applied to the main flaps, which are then also plowed shut.

Serial numbers and filling date are filled in on the Government panel by a rotary printing device; hence the need for the pre-alignment of all cases with respect to

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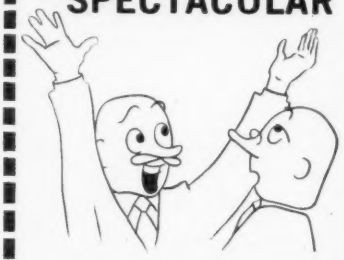
3

# POLYCLEER® BAGS

## A PACKAGING SPECTACULAR



No other packaging concept inherently combines such tremendous carry-home impulse and low cost appeal as **POLYCLEER® BAGS.**

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They are flexible—transparent—attractively printable—protective and readily reusable.

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**All sizes—gauges—styles—shapes**
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***"You can be positive if it's POLYCLEER®"***

Wire, phone, write for price quotations or package counsel.

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this side panel. No compression section is needed, as the weight of the bottles on the bottom flaps completes the seal. The cases travel by power-driven roller conveyors directly to trucks or rail cars for final shipment to destination.

With this automatic machine and the expensive product, numerous controls are necessary to prevent jamming of cases or bottles and to insure full cases. Much of the action is hidden from the line inspector nearest the machine; therefore, electrical sensing elements and interlocks are employed to make sure all case flaps are open before filling, that bottles do not jam against a cocked divider during loading and that 12 full fifths have been pushed into each case. So important is the latter checking point that the fingers which sense case fill will lock out if a bottle is missing, thus stopping operation of the machine; they must then be reset by hand.

Other malfunctions of the machine or package are pinpointed by lights on a control panel in front of the line inspector. An automatic chute discharges any cases that do not have all four flaps open. ●

## Sounding Board—question of the month

[*Continued from page 57*]

jobs lie in full view—an additional opportunity for new-product secrets to leak out. Again, bring the security importance to the supplier's attention, or perhaps a request that the particular "secret" job be done in a "classified" area of the plant or shop will usually solve the problem.

**I. C. Parker,** *President, Pangburn Co., Inc., Fort Worth:* Protecting new-product secrets, particularly those modifications consisting of changes in packaging, is quite a problem for us. It is nearly an impossible task. In spite of all we do, we still wonder how our competitors get our new-product secrets as quickly as they do.

For one thing, we do not even permit the packaging-suppliers' salesmen who contact us to call on our near competitors. We have even invited certain salesmen to quit contacting us. The rest have learned to be very cautious.

We do not even use local printers to print our advertising if they work for our near competitors. Naturally, we give the ones who work with us sufficiently large orders to make it worth their while.

With artwork one must be extremely cautious. We have to guard it just like one does money in the bank. We have our own artists who do most of the artwork. Our designs must be out a year in advance, but we would not dare show them then. Instead, we send out teaser advertisements suggesting and requesting that our customers wait until they can see our line.

When our salesmen call on our customers, they carry with them all the new-product secrets, which they guard with the utmost care. At this time the buyers are shown the new-product secrets and the total advertising and merchandising programs are revealed to them. But, even at this late date, certain secrets are shown only "behind the counter," i.e., to the buyer when he is alone. Some of our salesmen have been known to retrace their steps over 100 miles to retrieve a small card which had on it significant information.

**R. P. Behm,** *Assistant Plant Manager, Victor Gasket Co., Chicago:* The most effective safeguard in protection of a new product, in my opinion, is based solely on mutual respect between the vendor of the packaging material and the person doing the buying.

In the case of our company, where decision facilities for new-product packaging are not available, a vendor is selected to help in the design of the package, one who has facilities at hand for not only the design phase of the package, but the manufacturing ability as well.

When the finalized package has been approved, necessarily because of the draw on the vendor's facilities to accomplish our desires, the vendor is fully protected for a given period of time or for a given volume of purchase. Then he is given to understand that the item might be thrown to the open field for competitive quotes. This policy has proved to be effective, since the vendor has no fear of being immediately cut out of the picture and we have no fear of competition getting advance knowledge of our ideas. ●

## The shape of 1961

[*Continued from page 81*]

outlook is for even more complicated components and bottles with radically different shapes, posing problems in package specifications and tolerances and machinery operation.

### Pressures on production

Either simplification or complication of packaging forms necessitates changes in the machinery that handles them. For this reason, eve.. so-called standard packaging equipment is virtually custom built today for each big-volume application. One pouch packager is now available with a dozen different kinds of filling devices, heat sealers, saddle labelers, imprinters and other special attachments that enable the machine to handle solid, powdered, liquid or viscous products in pouches tailor made for the product and its means of marketing.

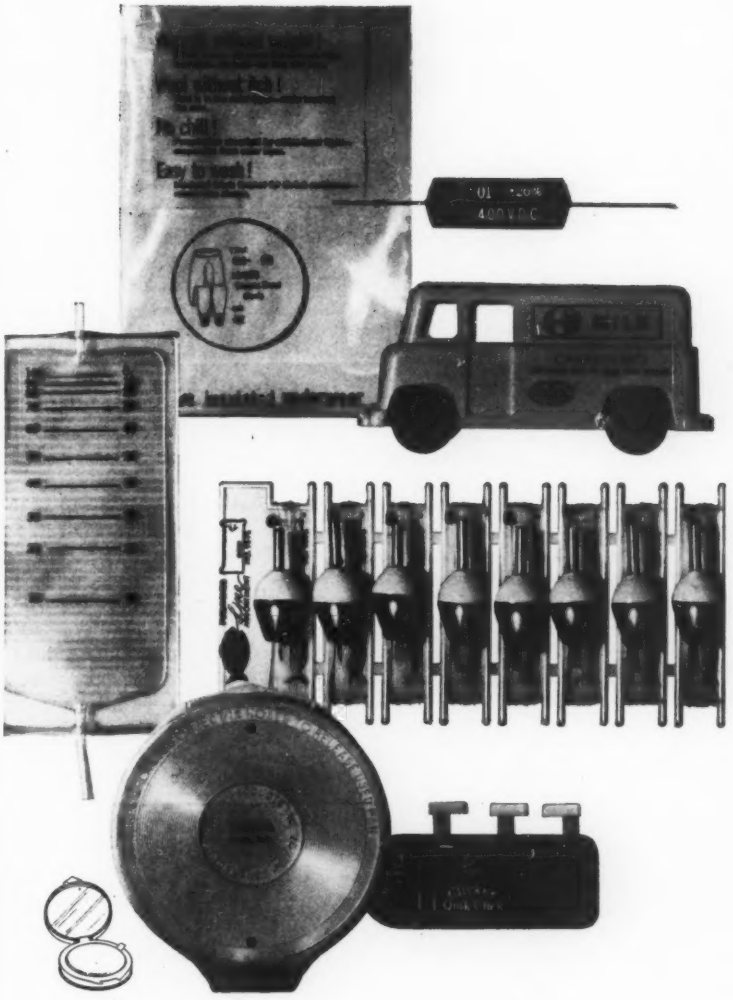
This trend will develop as machinery manufacturers swing more to the manufacture of specialized machine components that can be "stored on the shelf" and combined to meet particular specifications. It also has produced an offshoot of the machinery manufacturing business — the custom-machine builder. These smaller firms are destined to become increasingly important.

Use of the specialized type of machinery provided by the custom builders enables the packager to assemble complex containers on the packaging line at less cost than if the packages were obtained already assembled from the supplier.

### Speed, integration, versatility

The trend to ultra-fast packaging machinery has inevitably produced a demand for integrated equipment, since many packaging lines now operate so rapidly that it is impossible to shut down their components separately in case of emergency. Thus, both electrical and mechanical interlocks are becoming more common, as are electronic controls. Because the cost of such complex equipment is high, packagers also are demanding that automatic lines be versatile enough to handle many container sizes and types.

Automatic packaging lines with true feed-back control are still rare, but the trend is inevitable. Right

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HELPING YOUR PRODUCT SPEAK FOR ITSELF

now there are several cartoning operations for dry products that are experimenting with such control for fill weights. Under development are automatic controls to adjust other packaging operations.

### In-plant fabrication

Perhaps the greatest potential for in-plant fabrication of containers lies in the field of paperboard and flexible packaging. There is increasing talk of machines that will die cut, form, fill and seal cartons or boxes from roll-stock board. There are at least two examples of such a process involving foil, as well as several techniques for thermoforming plastic sheet and automatically combining it with the product.

But the feasibility of in-plant converting is only part of the question. How can a packager be assured of an adequate dollar return on capital expenditure for in-plant package forming? It might appear obvious that a hand-packaging operation could profitably be switched to an automatic machine where the packager needs the added output and where he can usually reduce labor cost from 30 to 75%. But frequently overlooked by packagers in such a change-over is the immediate need for dependable mechanics and operators who generally must be trained and paid a high salary.

In addition, we are entering a period of such rapid technological development that even the newest machines may be obsolete in two to five years. This possibility will force packagers to analyze carefully every proposed change in packaging operation to determine the true cost and probable return on investment.

## The role of management

Two questions stand out as areas of opportunity in 1961 where the managements of packaging firms can effect economies that will work to assure growth in the years ahead:

- Where do you place packaging responsibility?
- What about legal problems?

Management during 1961 will take a keener interest in coordinating packaging functions as a means of achieving the economies inherent in tighter packaging supervision.

Despite recognition of the importance of packaging in the corporate structure, research seems to point up great diversity in the channeling of functions. Some light is shed on this subject in two studies; one by the staff of the MODERN PACKAGING *Encyclopedia Issue* and the other by Rensselaer Polytechnic Institute. *(See "Organizing for Packaging," Dec., 1960, p. 81.)*

MODERN PACKAGING's study indicates that the trend is toward making one individual responsible for packaging. Of 86 firms reporting, 76 say that they now employ a packaging coordinator or director. According to the Rensselaer analysis, great diversity of the structure of packaging organization among companies occurs when management hands the packaging responsibility to widely different areas of specialization—advertising, engineering or research, for example.

### Legal problems

One of the newest factors that will affect near-future developments in packages and packaging machinery is increased Governmental regulation. And the outlook is for more Federal and state intervention.

In rapid succession, packaging has come under the influence of the 1958 Food Additives Amendment and the Color Additives Amendment to the Food, Drug & Cosmetics Act; the Textile-Labeling Act, and the Hazardous-Substances Labeling Act.

Far from over is the hassle over the Food Additives Amendment. While the former confusion has abated somewhat and it does not look now as if any important materials or other packaging adjuncts will be banned at the final deadline on March 6, some sophisticated questions on the toxicity and safety of packaging materials have not been finally settled. During the next two years, F&DA intends to review its decisions on even those packaging materials that are now approved by "prior sanction" or are "generally recognized as safe." There will undoubtedly have to be adjustments in the chemical contents of some packaging materials and in the packaging constructions for foods.

Both the F&DA and the Federal Trade Commission are taking a keener interest in slack-filled or deceptive packages and, despite recent setbacks in court, they are not likely to drop the campaign.

And a late report indicates that


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packagers employing seals of approval bestowed by testing laboratories can expect a visit from an FTC investigator. FTC wants to know what supervision is provided by those issuing the seals and what efforts are being made by the packager to insure maintenance of product quality as certified by the seal.

All these regulations and probings have produced or promise important changes in the composition of packaging materials and their placement around the product, and thus will have a definite effect on the type and operation of future packaging machinery for foods, drugs, chemicals and textiles.

Packagers will be well advised to beef up their legal departments to anticipate legislation wherever possible, thereby avoiding costly changeover and compliance procedures.

**Summary**

1961 shapes up as a year of great challenge to packaging. At a glance, the balance may appear to be heavily tipped by the weighty problems of trying to squeeze a profit out of an unpromising cost-price situation and endeavoring to comply with increasingly stringent and sometimes costly Government demands.

But for each problem there is the expectation of materials, construction and technical achievements to soften the hardest economic blows—and even an approaching end to the severest period of Government scrutiny of packaging. Divergent price trends, the introduction of economical new items, the battle for acceptance and dominance among new and established materials and containers, and the incessant improvements and combinations of old and new will pay dividends in this decade.

These volatile activities are creating such a rich choice of packages and techniques that the perceptive packager—alert to cost-cutting construction and production opportunities, and responsive to his market—can keep his competition guessing and groping. The best of them will be pace setters in their product areas, adopting and adapting useful ideas wherever they find them in the broad field of packaging, not only to satisfy present markets, but to create new customers with fresh, original packaging concepts.

This is both the challenge and the opportunity of 1961. ●

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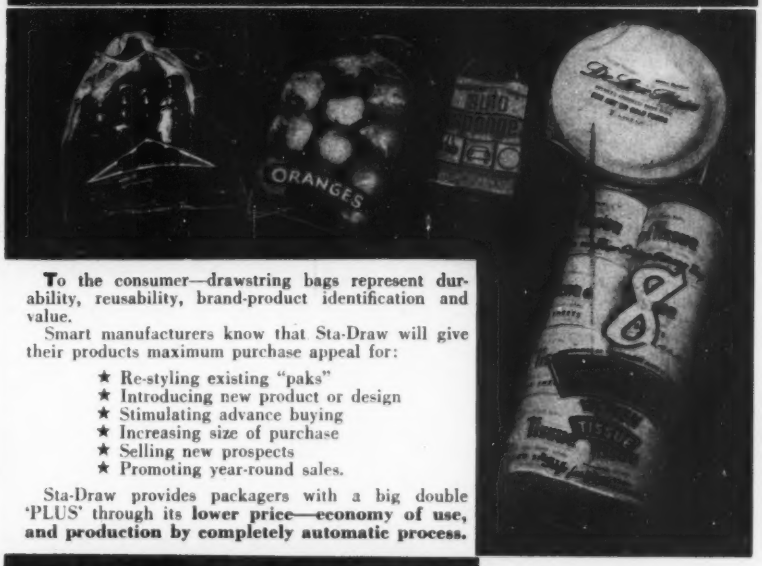


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## PDC industry award winner

The second "industry award" of the Package Designers Council has been presented to John Morrell & Co., Chicago, "for an outstanding package-design program resulting from the use of professional design counsel." The package-design consultant firm was Dickens, Inc., headed by Robert Sidney Dickens, also of Chicago.

Presentation to W. W. McCallum, president of Morrell, was made by Karl Fink, past president of PDC, at a Chicago dinner, Nov. 29. "Simply defined, this award is for a fine client-designer relationship," said Mr. Fink. "PDC feels it is important to emphasize the fact that proper use of package-design consultation brings about the most effective packaging. And we want to point out and commend those manufacturers, our clients, who have demonstrated that they understand the role of the package designer in their marketing program."

At the award ceremony, Mr. Dickens outlined the development of the Morrell program, launched originally in May, 1956. He traced the research in retail outlets in 22 states that led to selection of the distinguishing cool aqua blue background and modernized strong-red heart trademark on all present Morrell packages.

"Although success or failure depends on many variables," said Mr. Dickens, "one necessary ingredient can be contributed by the client alone—complete and full cooperation with the designer."

The award trophy, a metal cube embedded in a pyramid of transparent acrylic plastic, was designed by Margery Markley, PDC vice president. ●

**Karl Fink** *(left) presents award to W. W. McCallum, president of John Morrell & Co., at Chicago dinner. At right, Robert Sidney Dickens, designer of Morrell packages.*

**Heart trademark** *and aqua blue background are the distinguishing elements of the new design on all Morrell packages, illustrated by the canned hams shown here.*

## Standards for extrusion coatings

[*Continued from page 111*]

equipment to bring the gauge back within this range. Material with a variation beyond the $\pm 3$-sigma ($3\sigma$) range (approximately $\pm 0.2$ mil) is rejected.

Because of small variations in the measuring instrument and the operator, and from the normal variation from the extruder-die heater controllers, variations in gauge within the warning limits are not significant unless they show up in the same area in subsequent rolls.

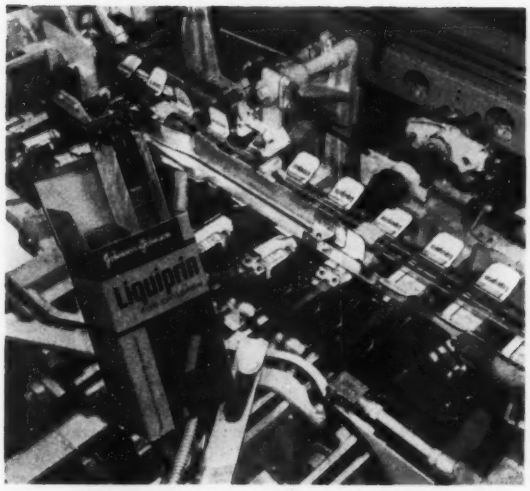
### Appearance

The appearance of extrusion-coated films is becoming more important in today's market. The overall appearance of the film is checked visually during printing, extrusion coating, and slitting and rewinding. Properties such as color, printing quality and various appearance defects are compared visually against visual "appearance" and "color" standards.

The control of printing quality, color, repeat, accuracy, etc., are very important functions of a quality-control department; however, they are not unique to the extrusion-coating operation. These controls have already been well publicized in articles dealing with flexographic and gravure printing, so they will not be discussed in any detail in this paper.

### Conclusion

The extrusion coaters now comprise a mature industry and each



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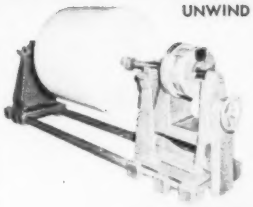

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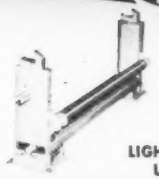

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member has a stake in the general acceptance and performance of polyethylene-coated films. It is in the interest of all members of the industry to reduce poor quality or unusable film to a nominal percentage. Furthermore, it is in the interest of each individual extrusion coater to raise the standards of the entire industry as much as possible because the onus of a poor or unserviceable film falls upon the innocent as well as the guilty.

The raw-material suppliers for the extrusion-coating field have contributed much valuable information, both theoretical and practical, which has helped to improve the quality of extrusion-coated materials. There is undoubtedly an additional store of information available within the various extrusion-coating companies. The pooling of all of this data would certainly provide the knowledge required for "preliminary" industry-wide standards. ●

## Foreign aerosol wins CSMA grand prize

**A** British aerosol is top winner in the 1960 Aerosol Packaging Awards Competition of the Chemical Specialties Mfrs. Assn.'s aerosol division. This initial grand prize to a foreign entry in nine years of CSMA contests went to a metal container for Sprayclean Spot Remover, a product of Durazone (Sales), Ltd., London, which also won an award this year with its Dew Air Freshener in the room-deodorants classification. The grand-prize Sprayclean aerosol also was judged best among "other household products" and in the new "foreign products" category. With these awards, Durazone became the first company ever to win in three classes in any year.

**Fourteen** *winners in CSMA 1960 annual aerosol competition. Grand prize winner (center) is pressure-packed spot remover by Durazone (Sales), London.*

Among 272 entries, the perfumes, colognes and toilet-waters category drew the most—40. "Other household products" attracted 39 and room deodorants 28. Because of the large number of new spray-starch-type products in the "other household products" classification, a special group for this item was created by the judges, who awarded first prize to Easy-On Spray Starch, Boyle-Midway Div. of American Home Products Corp.

Awards are based on good design and general sales appeal. Here are award winners in each category not already mentioned:

Automotive—Sohio White Tire Cleaner, Standard Oil Co. (Ohio); insecticides, repellents and moth proofers—Killer Super Bombe Parfumee, Laboratorie Agir (Procede SAFCA), Paris; shave products—Seaforth Minute Shave, Chesebrough-Pond's, Inc.; hair preparations—Breck Hair Set Mist, John H. Breck, Inc.; perfumes, colognes and toilet waters (women's products)—Esprit de Parfum, Fabergé, Inc., (men's products)—One For A Man Spray Cologne, Paul D. Blackman Corp.; other personal products—Gillette Right Guard Deodorant, Gillette Safety Razor Co.; food products—Taste Tap Spray O'Garlic, Gard Pressure Foods Corp.; medicinal and pharmaceutical products—Desenex Aerosol Foot Powder, Maltbie Laboratories div., Wallace & Tiernan; veterinary and pet products—Glover's Flea and Tick Killer, H. Clay Glover Co.; industrial products—Strauss Dry Lube, Brandywine Photo Chemical Co.

Honorable mentions only were awarded in two categories: paints, enamels, other protective coatings and paint remover—Krylon Glowing Fluorescent Spray Paint, Krylon, Inc.; and horticultural products—Black Flag Rose and Flower Spray, also Boyle-Midway. ●

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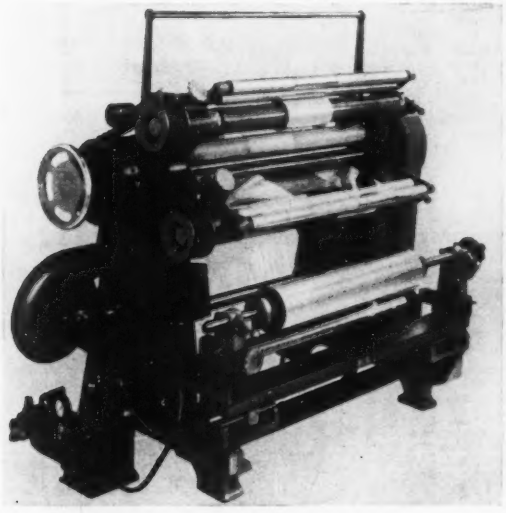

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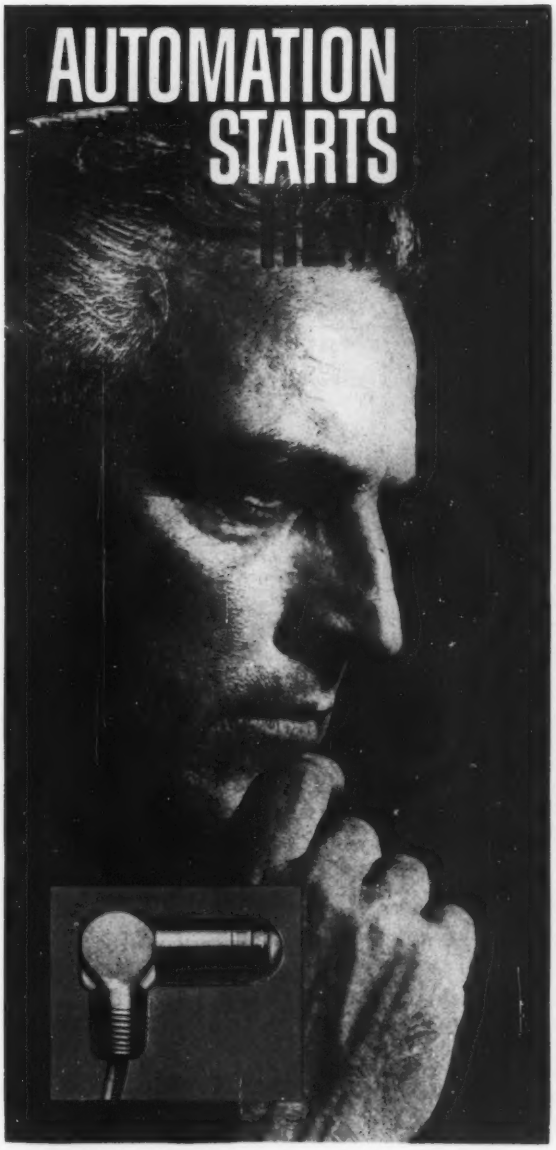

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**FOR SALE**—Used 2000 lb. capacity Vibration Package Tester with 5' wide x 8' long table. Complete with variable speed drive and 5 H.P. motor. Equipped with fences and safety guards. In good operating condition. Price $1,500.00. Inquire L. A. B. Corporation, Skaneateles, New York, Phone: OVerbrook 5-5781.

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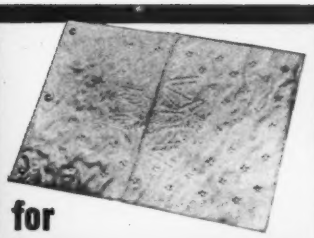

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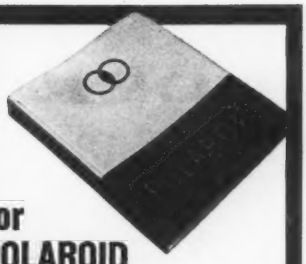

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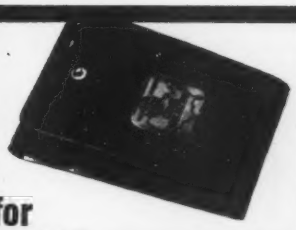

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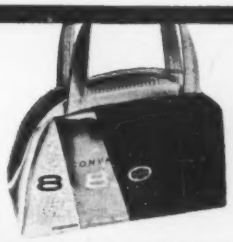

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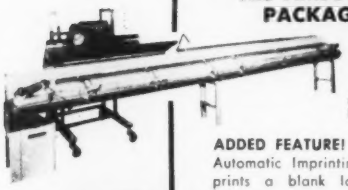

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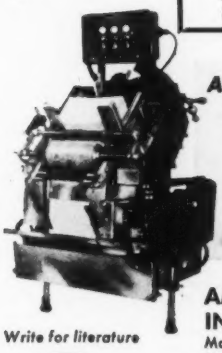

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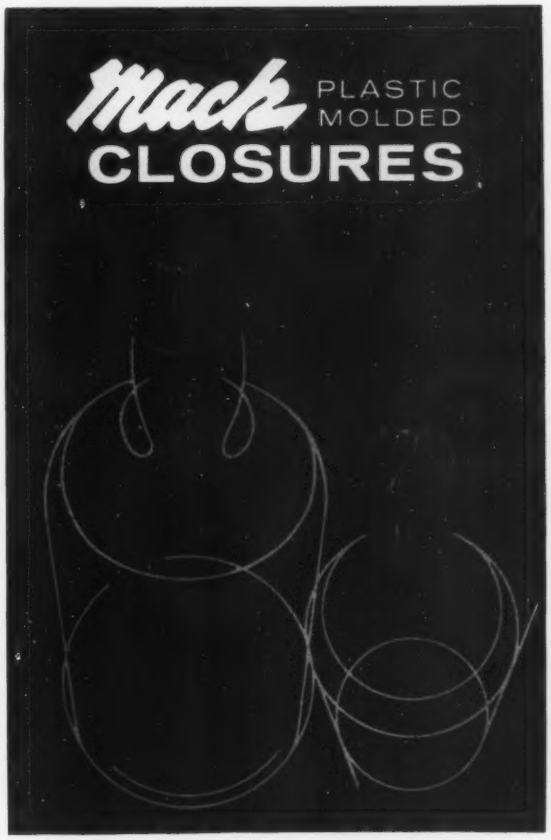


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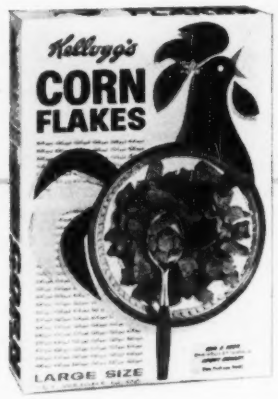


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- Signature alone remains unchanged
- Rely heavily on Pneumatic equipment

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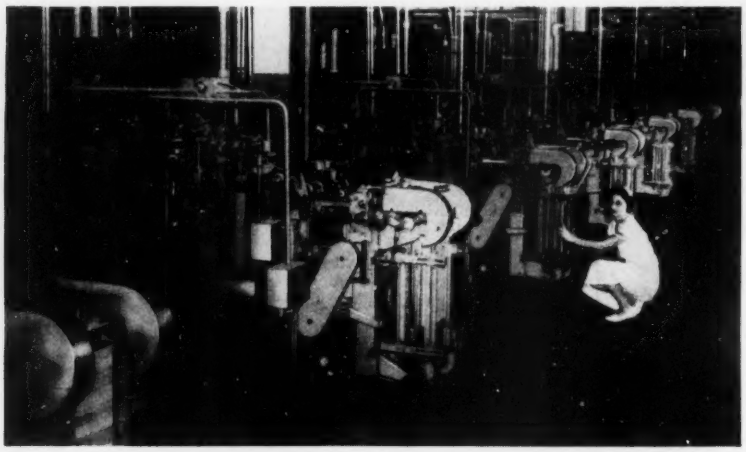
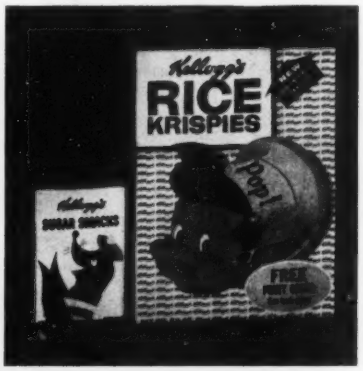
Kellogg's packaging methods naturally reflect Kellogg's progressive approach to this aspect of their production and merchandising. In Memphis, Kellogg's newest facility, as well as in other Kellogg plants, Pneumatic packaging equipment predominates. Memphis production of individual service packages is handled on battery arrangement of Pneumatic Package Maker combinations. The larger containers of Kellogg cereals are formed, lined, weighed and top sealed on adjustable lines of Pneumatic machines.

The strong emphasis on Pneumatic equipment prevails throughout their fifteen other Kellogg plants and branch installations around the world that supply more than a dozen different breakfast cereals to the United States and one hundred other countries. Such huge volume demands maximum operating efficiency to avoid product waste, time losses and maintenance expenses which could amount to critical figures. Pneumatic operating efficiency, flexibility and service is a Kellogg safeguard — one extremely important means of "profit protection" widely used by the foremost producers of many kinds of packaged and bottled products. Good packaging for you, too, may well begin with Pneumatic.



**Several Small Double Package Maker combinations in operation at Kellogg's modern plant at Memphis, Tennessee.**

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# BERNARDIN closures keep good company!

The trust inspired by a brand name such as Kraft is a priceless accolade bestowed by the consumer for the integrity of a product and its maker. Such an asset naturally is carefully protected. And sharing in that responsibility are the suppliers of accessories (like closures, for example) with the same standard of integrity. Such we like to believe is our relationship with the trusted name—Kraft. *May our Closure Craftsmen work with you?*

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